Report on Further Measurements of Synchronization and Communication in Cultures of Dinoflagellates.

Fritz-Albert Popp

Based on the measurements of photon emission from Gonyaulax polyedra, we continued to investigate the phenomenon of synchronization of the photon emission from Gonyaulax polyedra by extending the same measurements and evaluations to other species of dinoflagellates, i.e. Protoperidinium elegans, Pyrocystis lunula, and mixtures of all of them, including mixtures with G.polyedra. The introduction to this new method of investigating biocommunication, the materials and methods as well as the results of the measurements on G.polyedra and the interpretation has been presented on the ICRL-meeting (April 4-7, 1993). A report of these measurements including the results and the discussion has been given. Table 1 shows the measurements which have been performed now in the second stage of this research, Table 2 contains the most essential results.

Table 1: Further Measurements on G.polyedra, P.elegans and P.lunula

Species	distances (mm)	time intervals (s)	number of measurements (à 1024)
G.polyedra-empty cuvette	7.5	0.1; 1	8
P.lunula	7.5; 15	0.1; 1	32
P.elegans	7.5; 15	0.1; 1	32
G.polyedra/P.lunula*	7.5; 15	0.1; 1	32
G.polyedra/P.elegans*	7.5; 15	0.1; 1	32
P.elegans/P.lunula*	7.5; 15	0.1; 1	32
P.elegans-P.lunula**	7.5	0.1; 1	16
P.lunula-P.elegans**	7.5	0.1; 1	16
P.elegans-empty cuvette	7.5	0.1; 1	14
P.lunula-empty cuvette	7.5	0.1; 1	14
G.polyedra***		0.1; 1	8
G.polyedra***		0.1; 1	8
G.polyedra-G.polyedra	7.5	0.1; 1	16

*) "/" mixture of both in the two cuvettes
**) "-" one cuvette with one species-the other cuvette with the other species
***) always one cuvette in the middle of the shutter

Table 2: QAB-,QTAB-, QBA- and QTBA-values for the different measurements

Species	distance (mm)	time-interval (s)	QAB/QTAB	p	QBA/QTBA	p
G.polyedra	7.5	1	0.17/0.54	0.00	0.32/1.41	0.00
	15.0	1	0.25/0.47	0.11	0.34/0.66	0.00
	7.5	0.1	0.14/0.70	0.00	0.15/0.85	0.00
	15.0	0.1	0.06/0.55	0.00	0.64/0.79	0.10
P.lunula	7.5	1	0.31/0.81	0.04	0.04/0.49	0.00
	15.0	1	0.36/1.16	0.01	0.63/0.67	0.56
	7.5	0.1	1.28/12.8	0.00	0.96/5.22..	0.00
	15.0	0.1	0.76/1.01	0.05	0.78/0.80	0.36
P.elegans	7.5	1	0.007/0.37	0.00	0.003/0.36	0.00
	15.0	1	0.058/0.38..	0.05	0.027/0.15..	0.00
	7.5	0.1	0.253/2.59	0.00	0.692/0.75	0.39
	15.0	0.1	1.488/0.52	0.60	0.713/0.67	0.39
P.elegans/ P.lunula	7.5	1	0.027/0.48	0.00	0.017/0.08	0.02
	15.0	1	0.032/1.68..	0.00	0.023/0.25	0.03
	7.5	0.1	1.036/7.21	0.01	0.637/1.64..	0.01
	15.0	0.1	0.044/0.15	0.03	0.136/0.12	0.85
G.polyedra/ P.elegans	7.5	1	0.012/0.32	0.00	0.007/0.44	0.00
	15.0	1	0.008/0.31	0.00	0.007/0.21	0.00
	7.5	0.1	0.067/0.06	0.43	0.076/0.81..	0.00
	15.0	0.1	0.451/9.74	0.00	0.349/0.29..	0.87
G.polyedra/ P.lunula	7.5	1	0.013/0.12	0.00	0.019/0.20	0.00
	15.0	1	0.023/0.24	0.00	0.023/0.32	0.00
	7.5	0.1	0.039/0.25	0.17	0.148/2.27	0.01
	15.0	0.1	0.303/0.72	0.05	0.057/0.19	0.01

Let us recall that

$$QAB = \frac{\sigma\left(\frac{i_1}{i_2}\right)^m}{\sigma\left(\frac{i_1}{i_2}\right)^o}$$

$$QBA = \frac{\sigma\left(\frac{i_2}{i_1}\right)^m}{\sigma\left(\frac{i_2}{i_1}\right)^o}$$

$$QTAB = \frac{\sigma\left(\frac{i_1}{i_2}\right)^{m,T}}{\sigma\left(\frac{i_1}{i_2}\right)^o}$$

$$QTBA = \frac{\sigma\left(\frac{i_2}{i_1}\right)^{m,T}}{\sigma\left(\frac{i_2}{i_1}\right)^o},$$

where "T" accounts for the "theoretically" expected values under the assumption that the photon emission by use of the open shutter can be described by a linear combination of the photon intensities and variances by use of the closed shutter. Every deviation from this linear relationship excludes the possibility of "linear optics" in the sense of rescattering- and absorption processes. From Table 2 it becomes evident that "the communication" of the dinoflagellates of the two chambers cannot be described in terms of linear optics. Rather, the synchroneous "flickering" of the dinoflagellates induces in all cases a strong and nonlinear decrease of the variance of the ratio of the intensities of both the chambers. The Figures 1 display some examples. This effect is due to an "unification" of both the samples. They behave more and more as an entity. It is worthwhile to note that "communication" and "unification" gets some common phenomenon under this aspect.

Besides of that Table 2 shows some further interesting features:

1. With increasing measurement-time interval the "condensation effect" (decrease of the variance of the ratios of the intensities of the "communicating" systems) becomes more distinct.

2. This effect tends to become stronger with decreasing distance of the samples, however much less stronger as expected if one provided a quadratic dependence on the distance.

3. The strength of the effect depends on the species under consideration.

The non-linearity of the effect and all these features exclude the possibility that the synchronization is due to simple rescattering of light originating from one chamber and travelling from this chamber to the other one. Rather, the non-linearity, the tendency of lowering the intensities by opening the shutter, the decrease of

the "condensation effect" with increasing distance of the cuvettes as well as the dependency of the effect on measurement-time interval and on the species under investigation indicate an active role of the biological samples in this phenomenon under investigation.

Figures 2 display this effect in case that only one cuvette with dinoflagellates has been fixed in a position just between the two chambers, where the photon emission can be observed from both multipliers at the same time. Again the similarity to the results of two separated cuvettes in both the chambers with open shutter indicate the "biological" cause of the synchronization.

The further Tables and Figures which are enclosed document the most of the essential data of all these measurements.

At the moment we do not know the mechanism behind this phenomenon. Our results exclude the validity of the present and fashionable interpretation in terms of pulse-coupled oscillators (Mirollo & Strogatz, 1990).

Rather, it can be explained in terms of "destructive interference" on the basis of Dicke's theory. However, for this investigation further experiments have to be performed. We are just planning the next steps.

Figures 1 and 2 display the following graphs from left to right:

1. The intensities of channel 1 (top) and channel 2 (bottom) ordered according to decreasing amplitude.

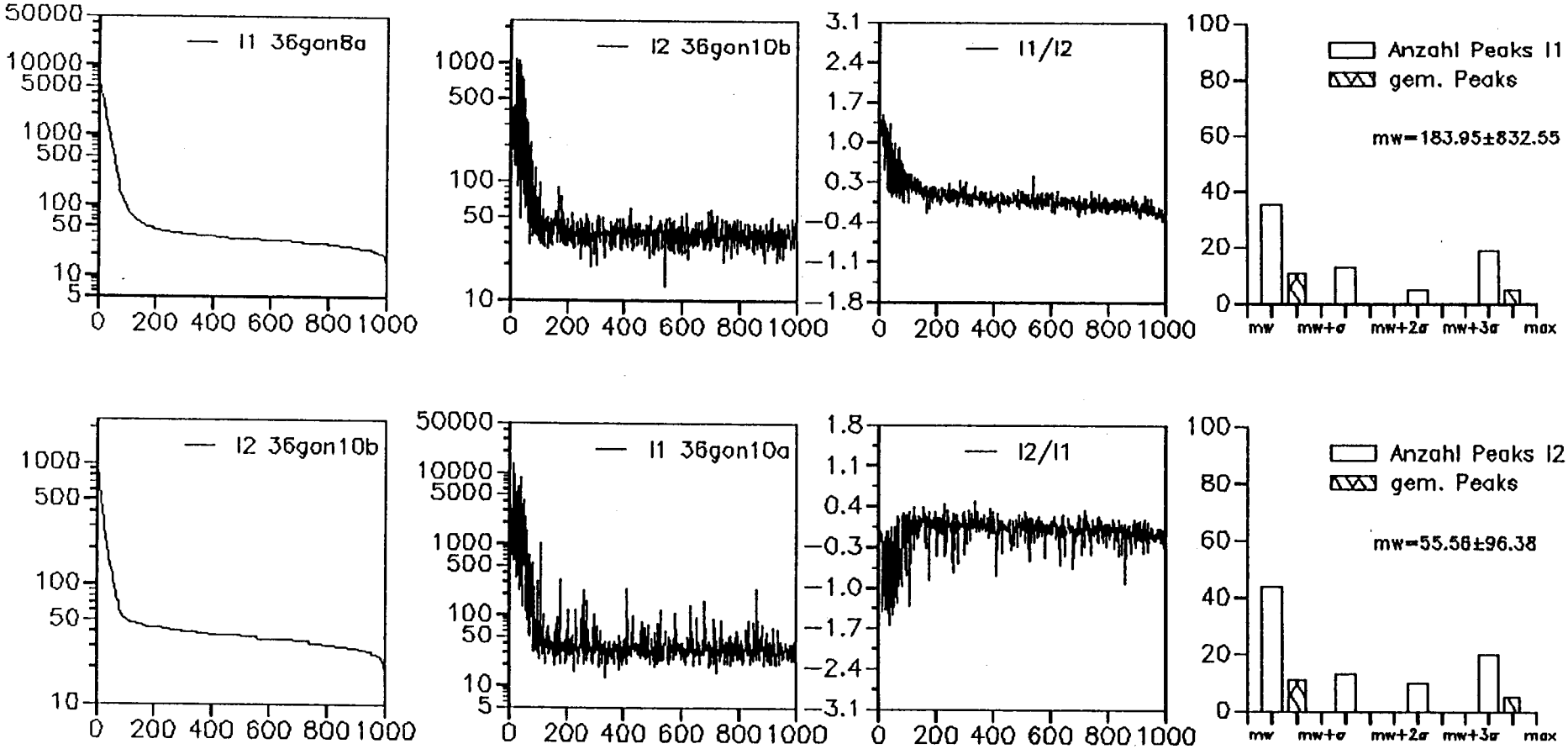
2. The intensities of channel 2 (top) and channel 1 (bottom) ordered in just the same time-dependence as the intensities on the left graphs (channel 1 and channel 2, respectively).

3. The ratios $\frac{i_1(t)}{i_2(t)}$ (top) and $\frac{i_2(t)}{i_1(t)}$ (bottom) in the same time-dependence t as the intensities of the left graphs.

4. The number of flashes (intensities $\mathrm{i} > \mathrm{mw} + 3\sigma$, $\mathrm{i} > \mathrm{mw} + 2\sigma$, $\mathrm{i} > \mathrm{mw} + \sigma$, $\mathrm{i} > \mathrm{mw}$, with mw = meanvalue, σ = mean deviation) of the channel 1 (top) and of the channel 2 (bottom).

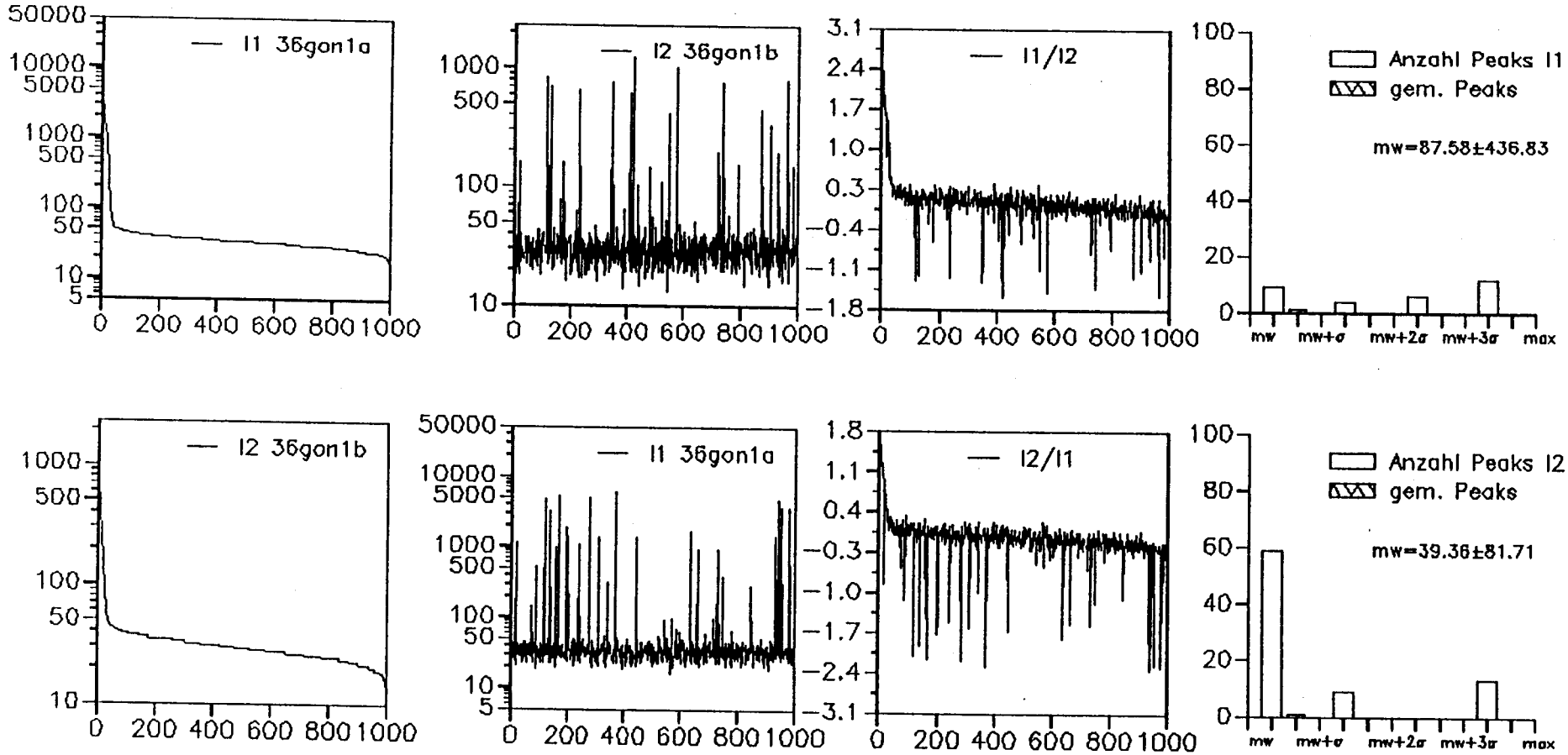
Figures 1 show alternating series of dinoflagellates without and with visible contact, Figures 2 show the results of only one cuvette observed with the two photomultipliers.

Gonyaulax, Δt=100ms, d=7.5mm, with contact, 36gon10a, 36gon10b

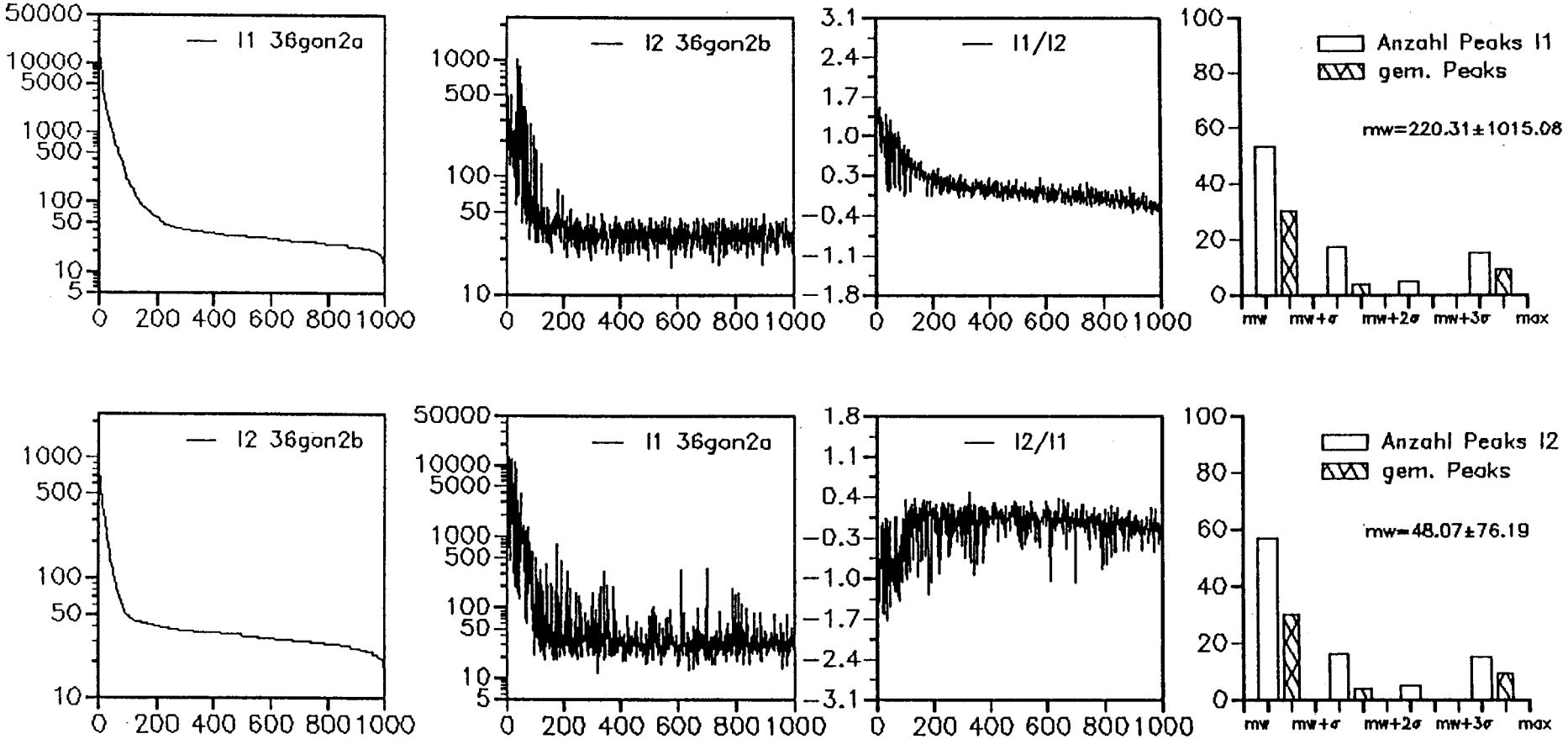


Figures 1

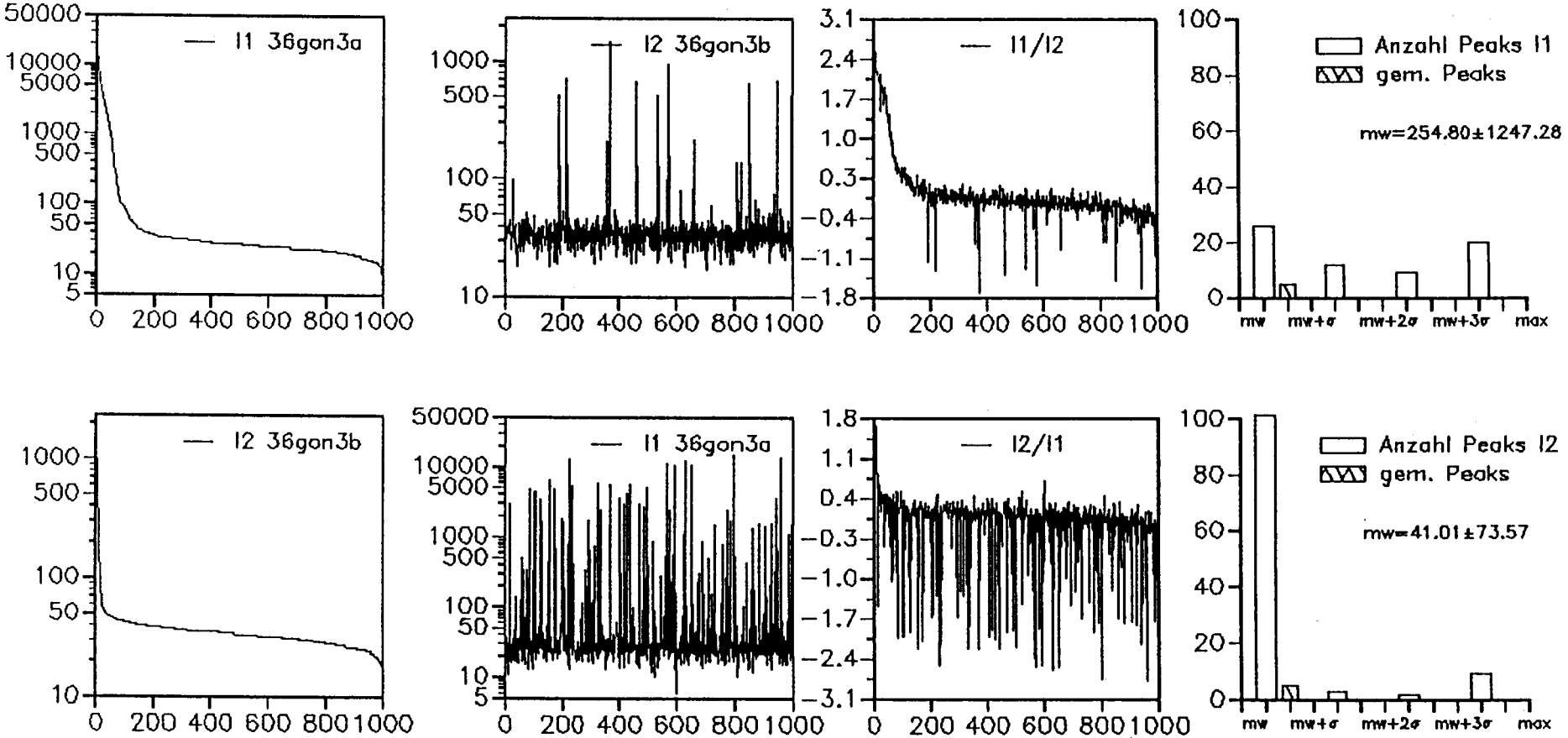
Gonyaulax, Δt=100ms, d=7.5mm, without contact , 36gon1a, 36gon1b



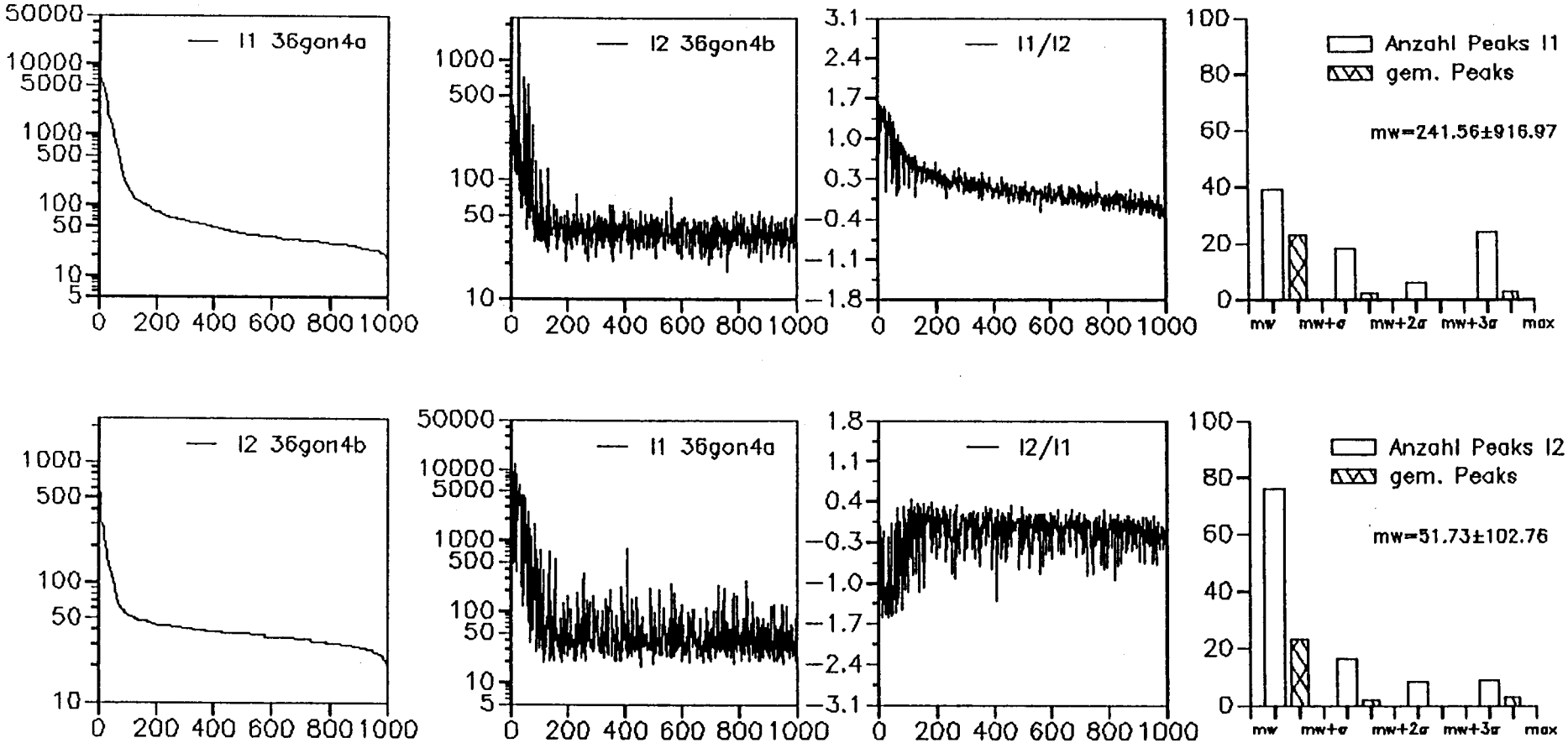
Gonyaulax, Δt=100ms, d=7.5mm, with contact, 36gon2a, 36gon2b



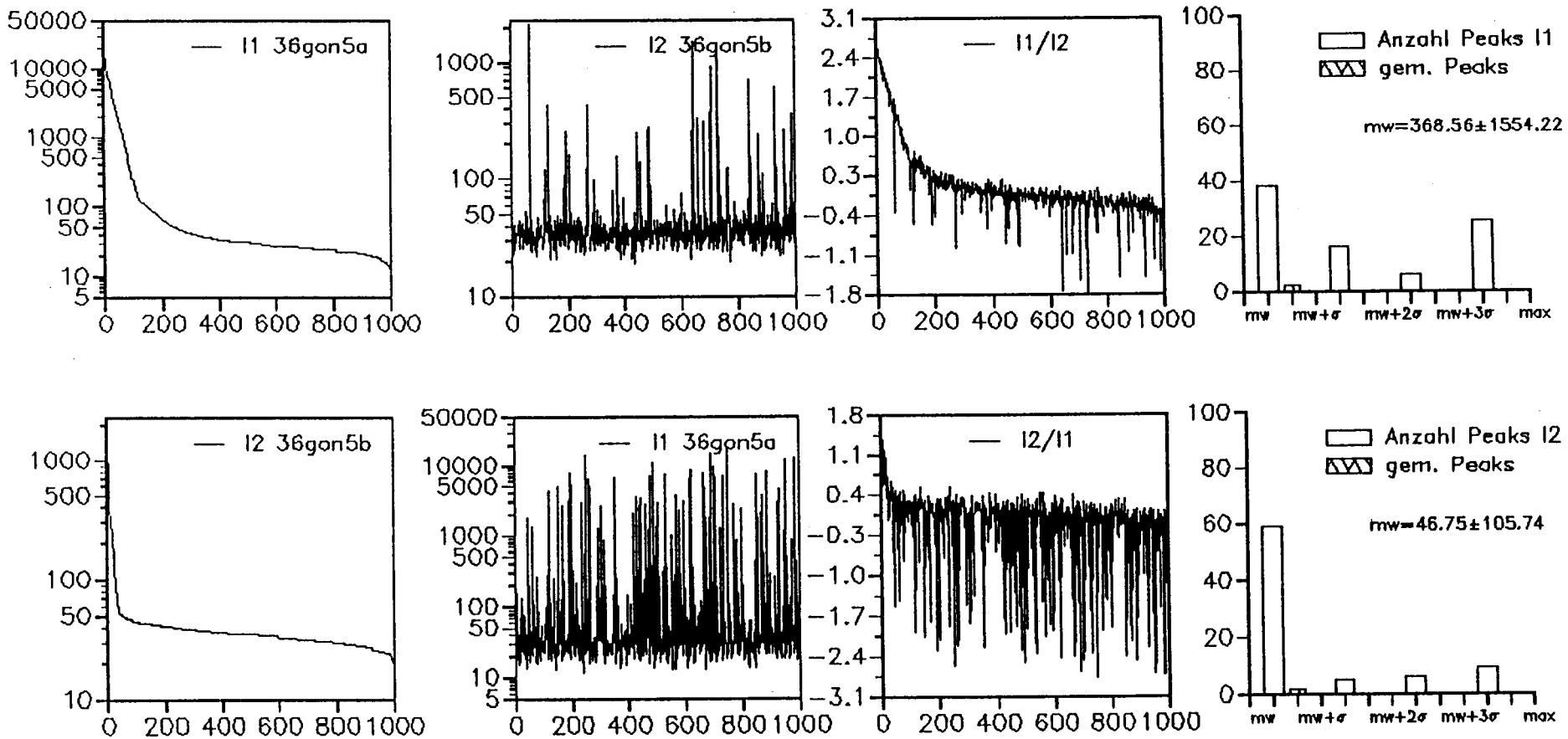
Gonyaulax, Δt=100ms, d=7.5mm, without contact , 36gon3a, 36gon3b



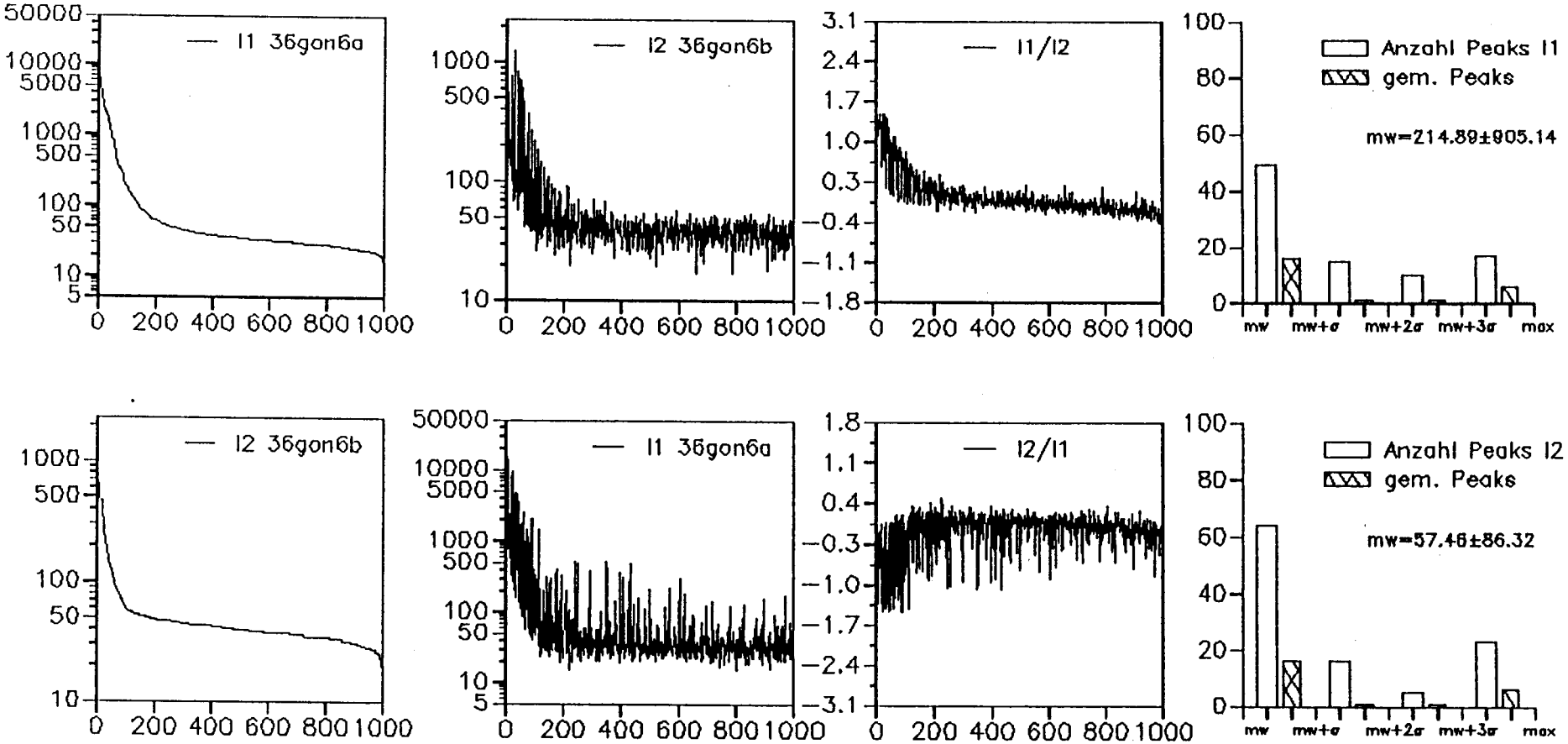
Gonyaulax, Δt=100ms, d=7.5mm, with contact, 36gon4a, 36gon4b



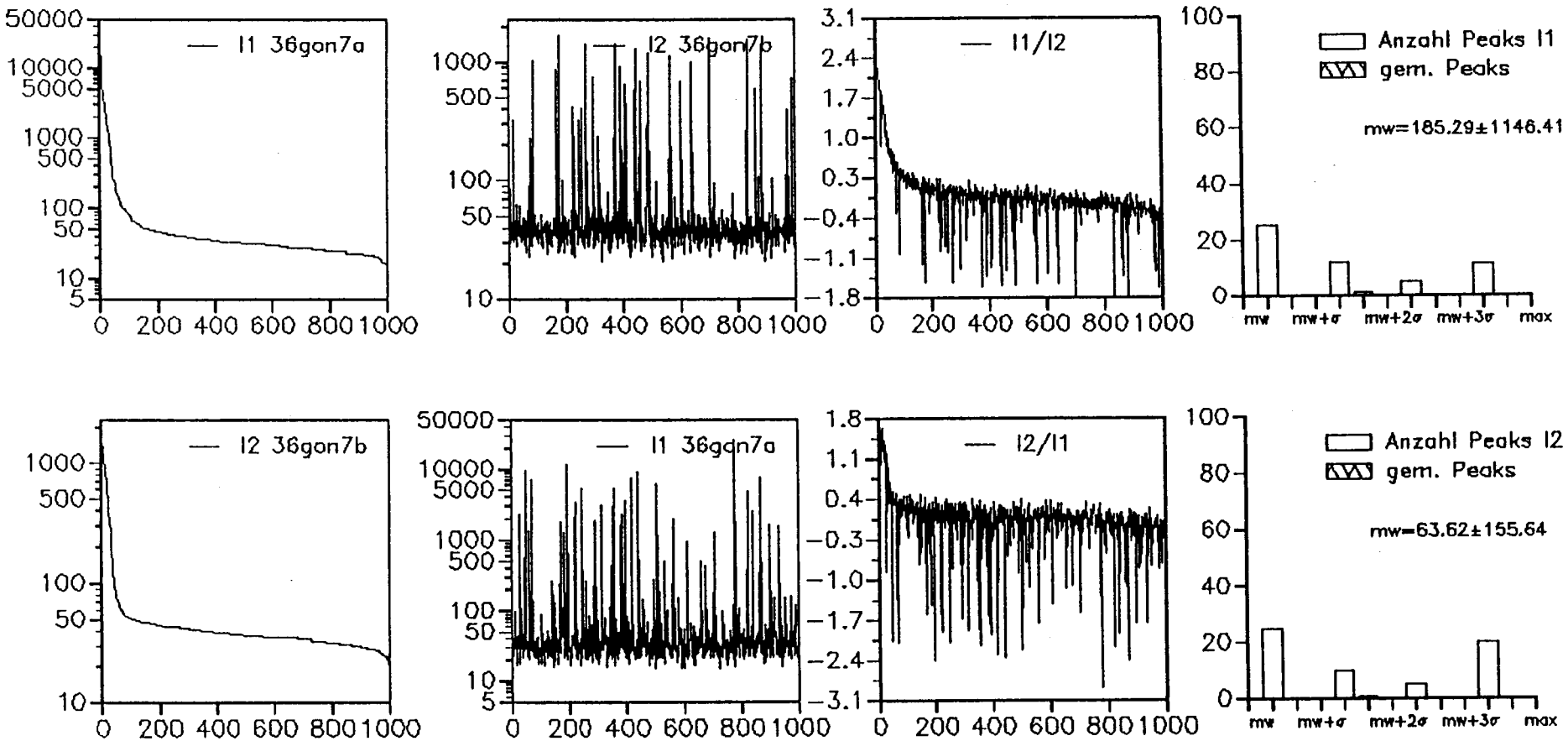
Gonyaulax, Δt=100ms, d=7.5mm, without contact , 36gon5a, 36gon5b



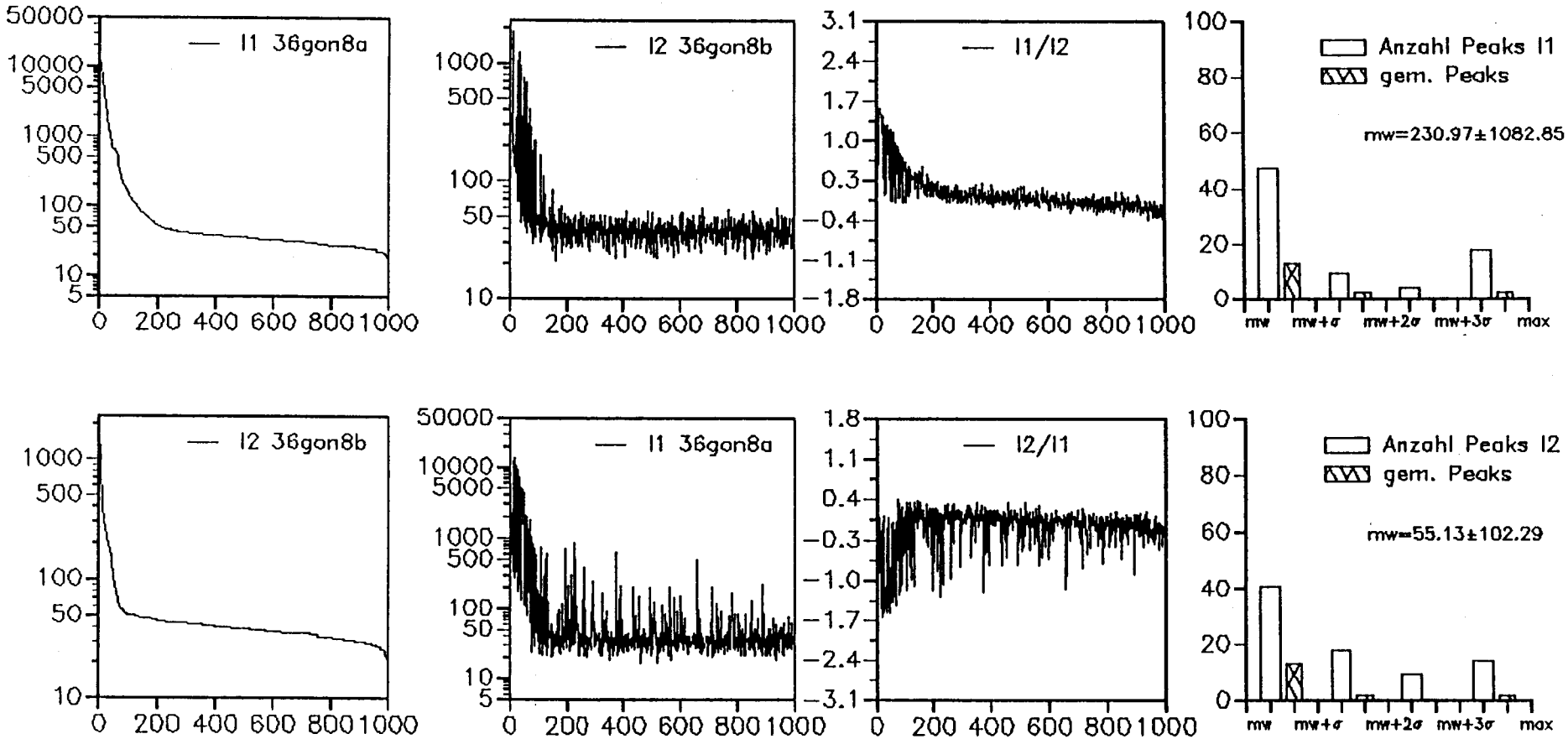
Gonyaulax, Δt=100ms, d=7.5mm, with contact, 36gon6a, 36gon6b



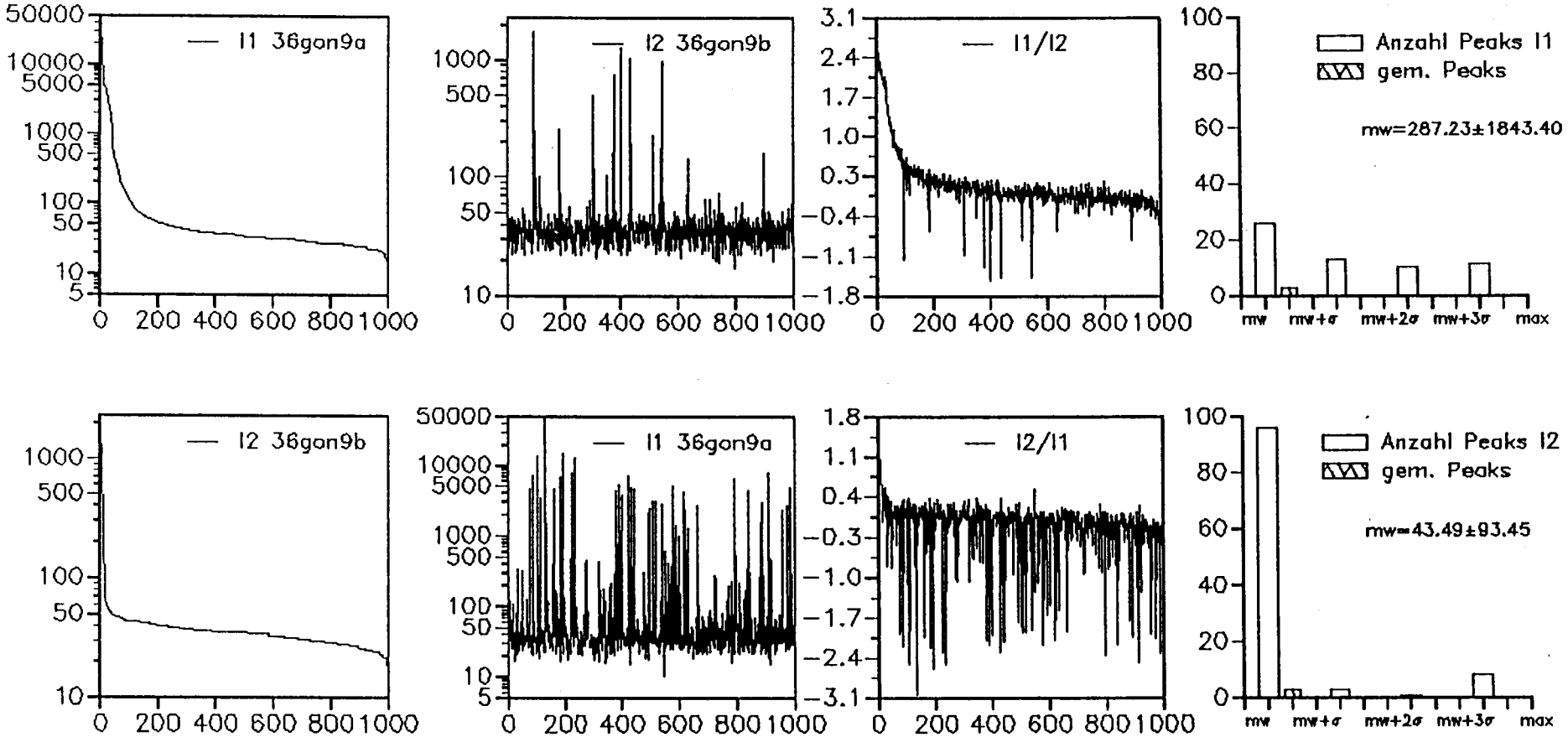
Gonyaulax, Δt=100ms, d=7.5mm, without contact , 36gon7a, 36gon7b



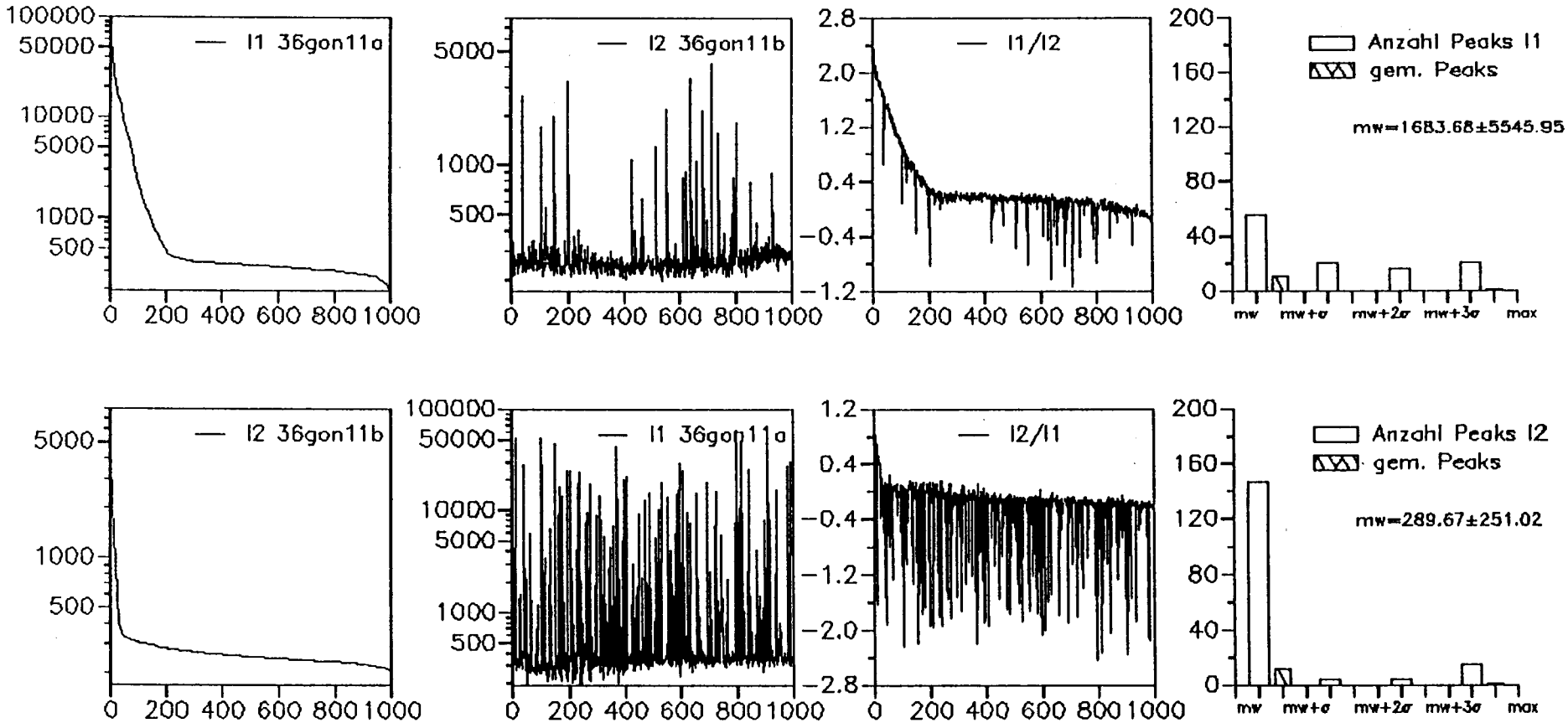
Gonyaulax, Δt=100ms, d=7.5mm, with contact, 36gon8a, 36gon8b



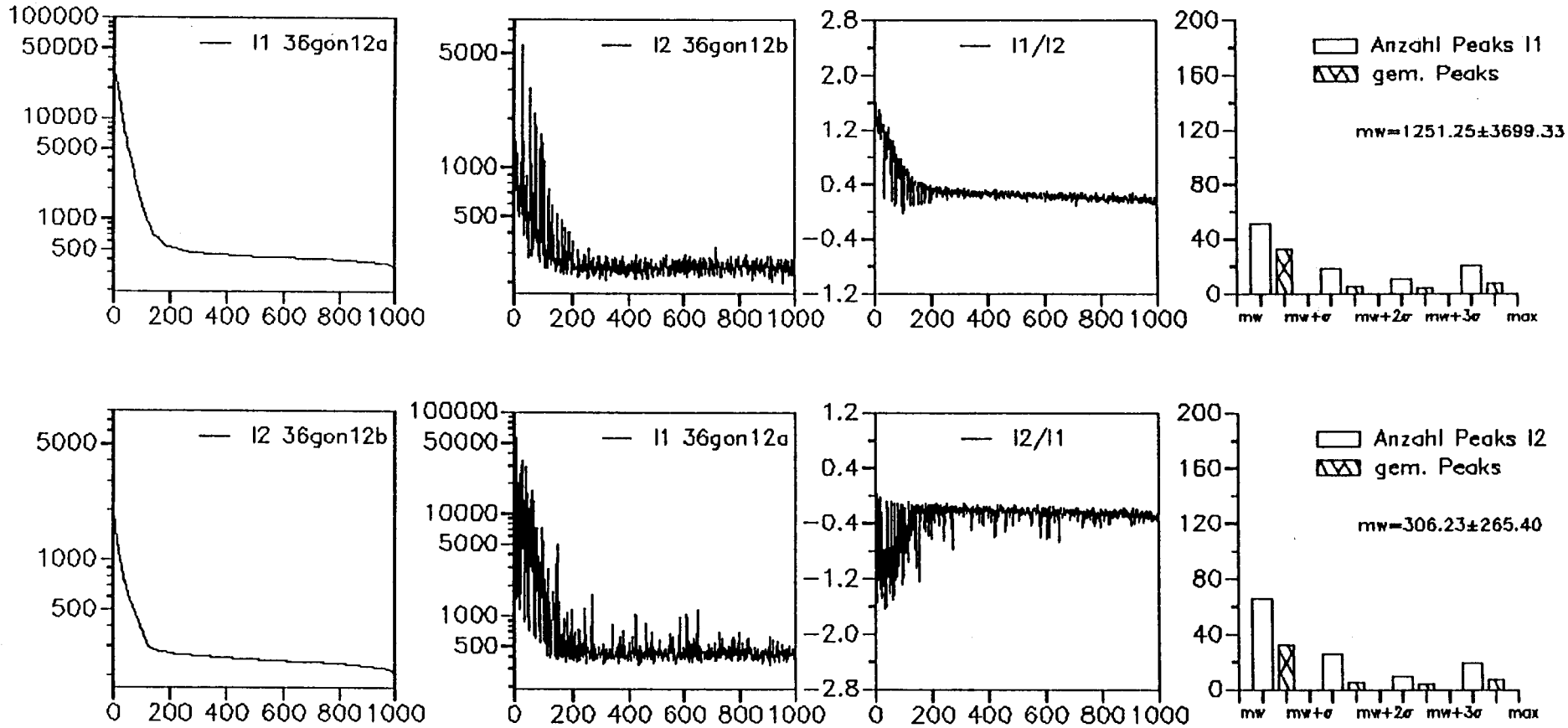
Gonyaulax, Δt=100ms, d=7.5mm, without contact , 36gon9a, 36gon9b



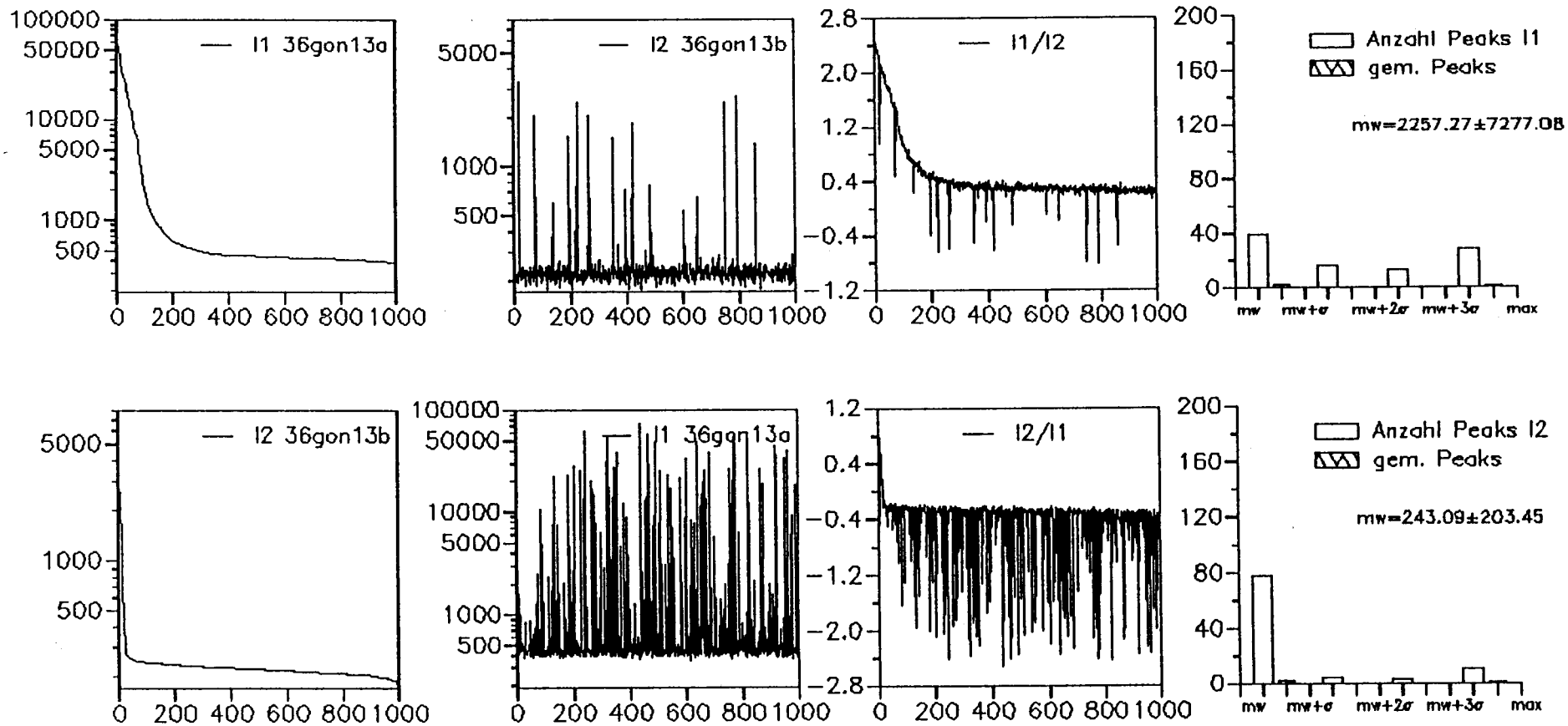
Gonyaulax, Δt=1s, d=7.5mm, without contact, 36gon11a, 36gon11b



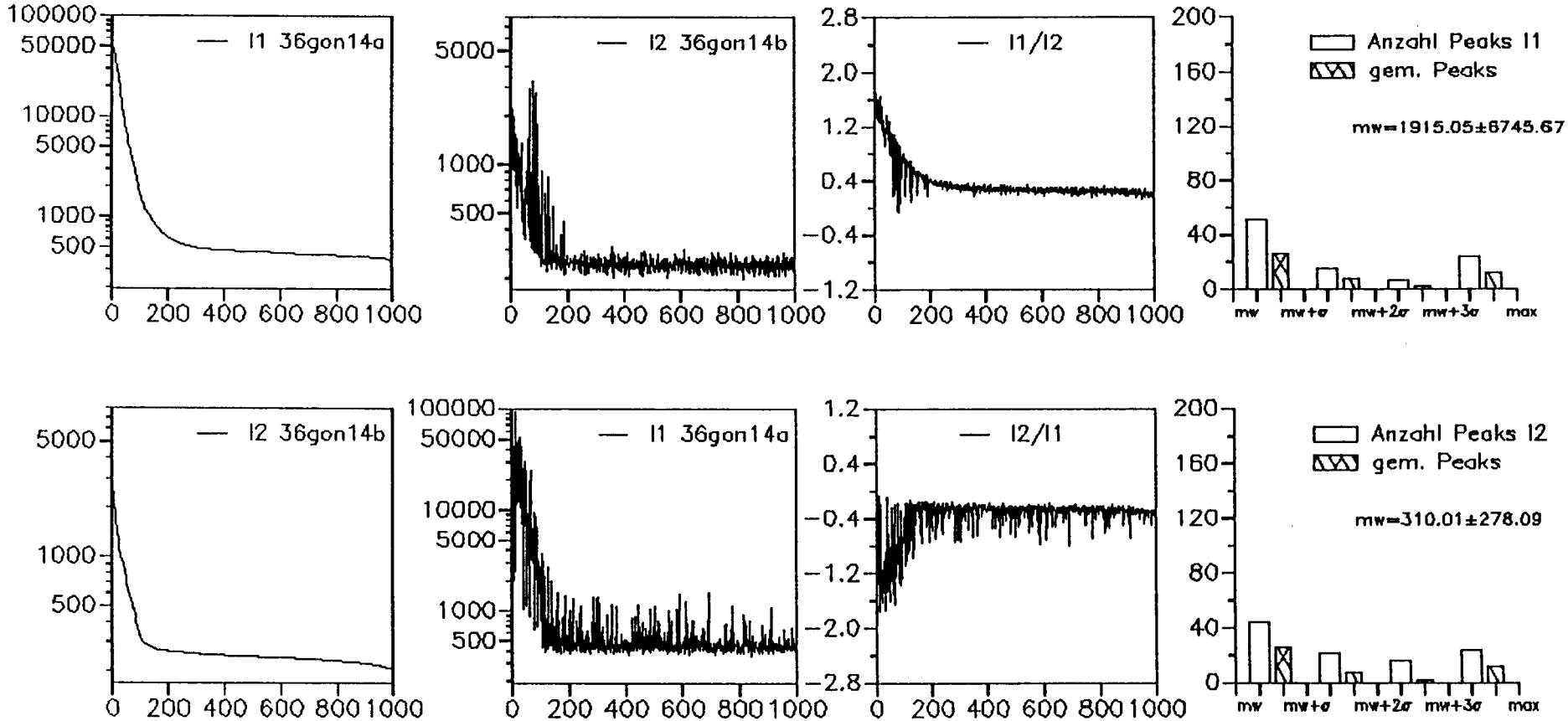
Gonyaulax, Δt=1s, d=7.5mm, with contact, 36gon12a, 36gon12b



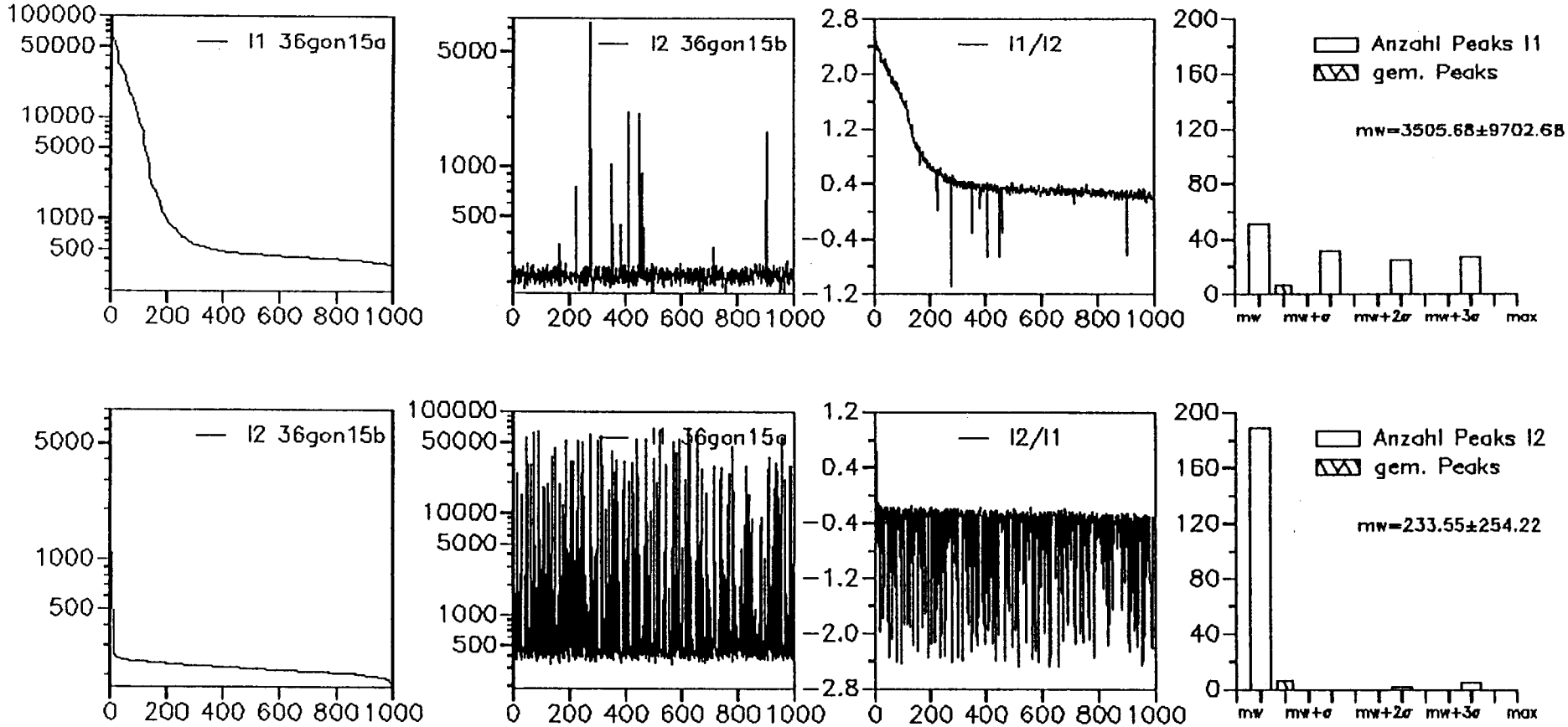
Gonyaulax, Δt=1s, d=7.5mm, without contact, 36gon13a, 36gon13b



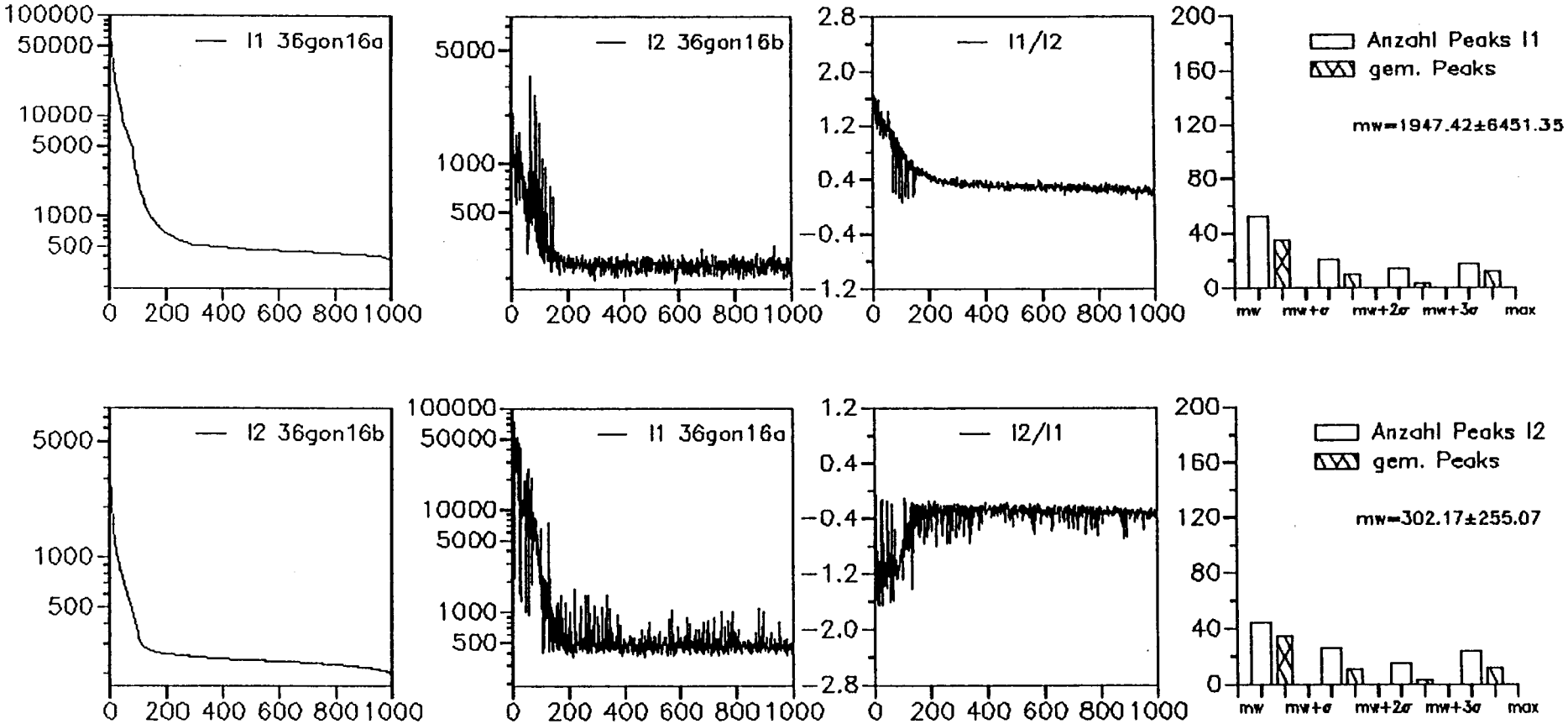
Gonyaulax, Δt=1s, d=7.5mm, with contact, 36gon14a, 36gon14b



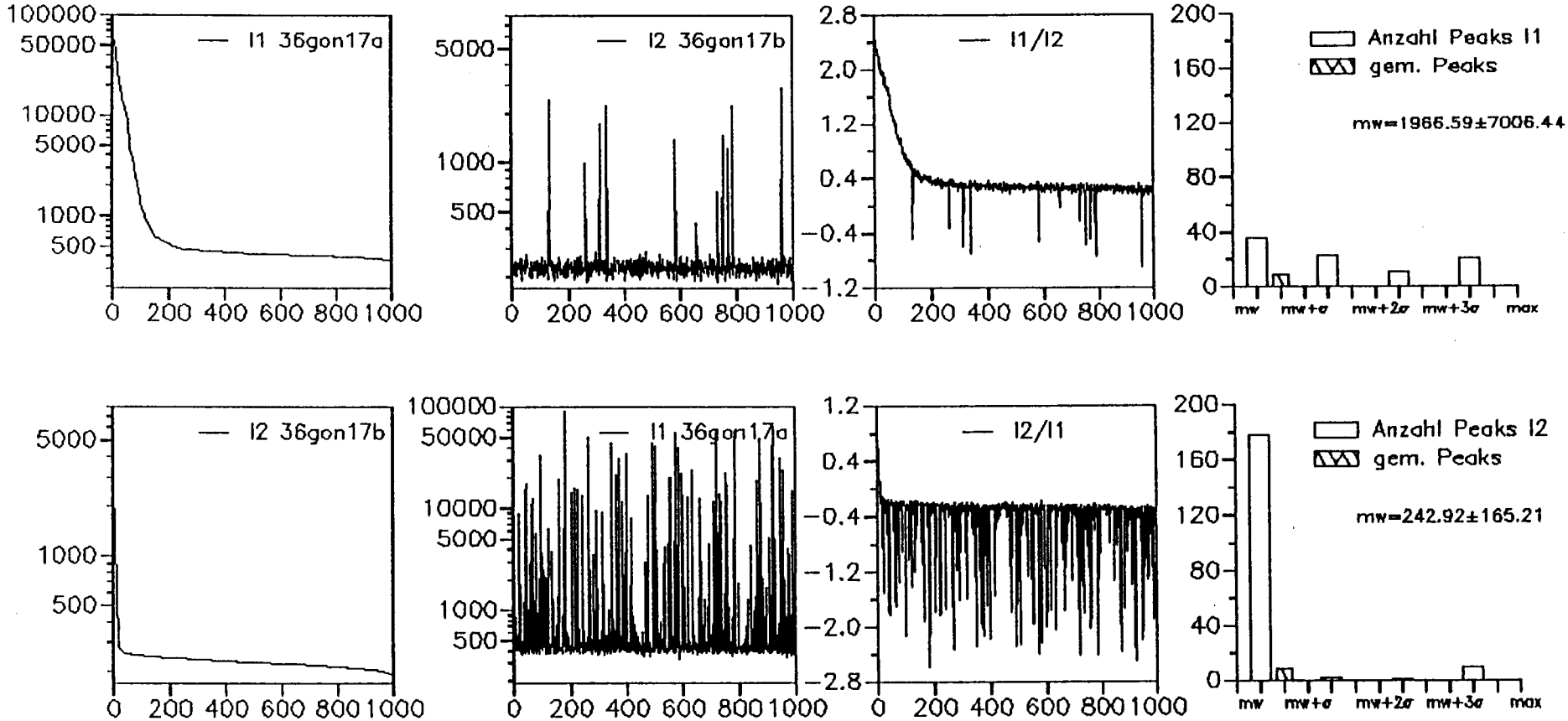
Gonyaulax, Δt=1s, d=7.5mm, without contact, 36gon15a, 36gon15b



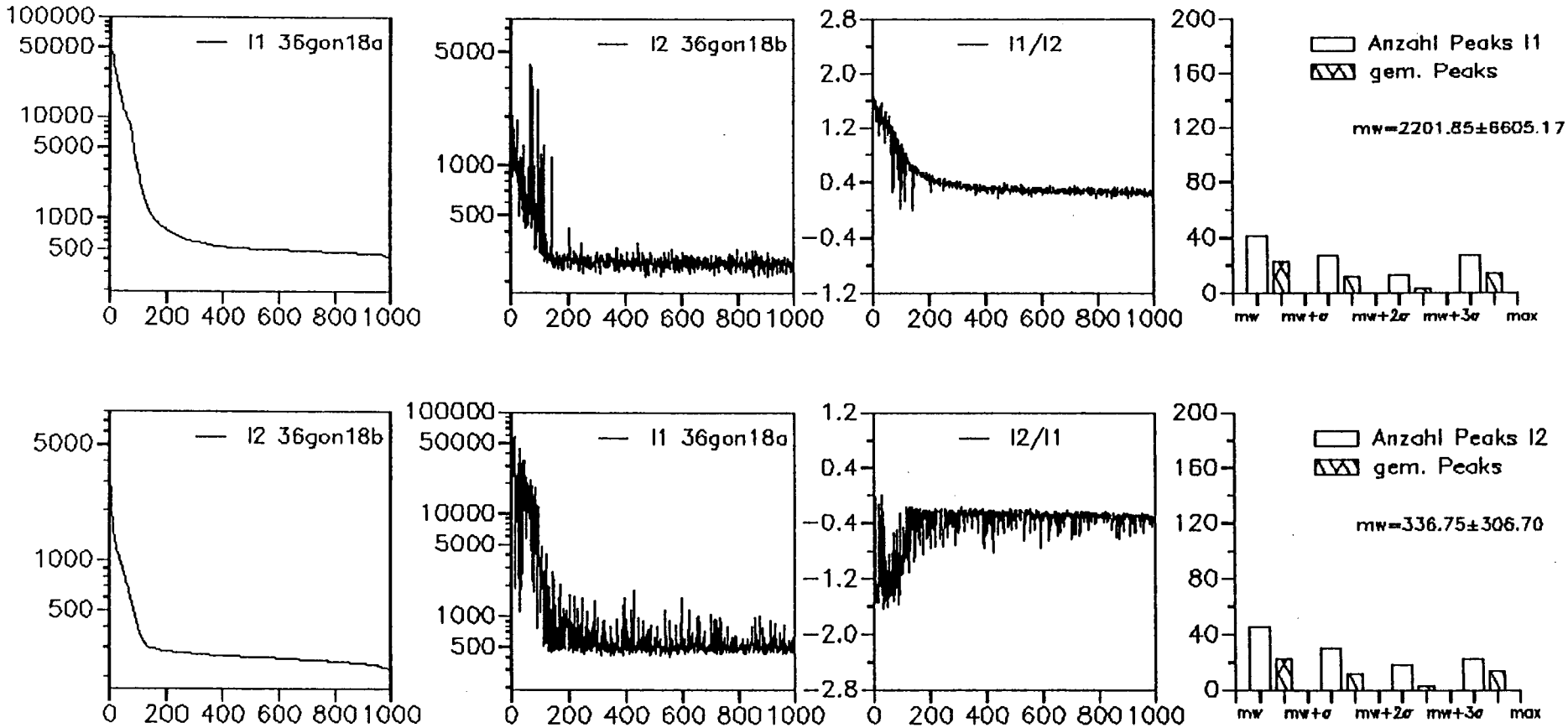
Gonyaulax, Δt=1s, d=7.5mm, with contact, 36gon16a, 36gon16b



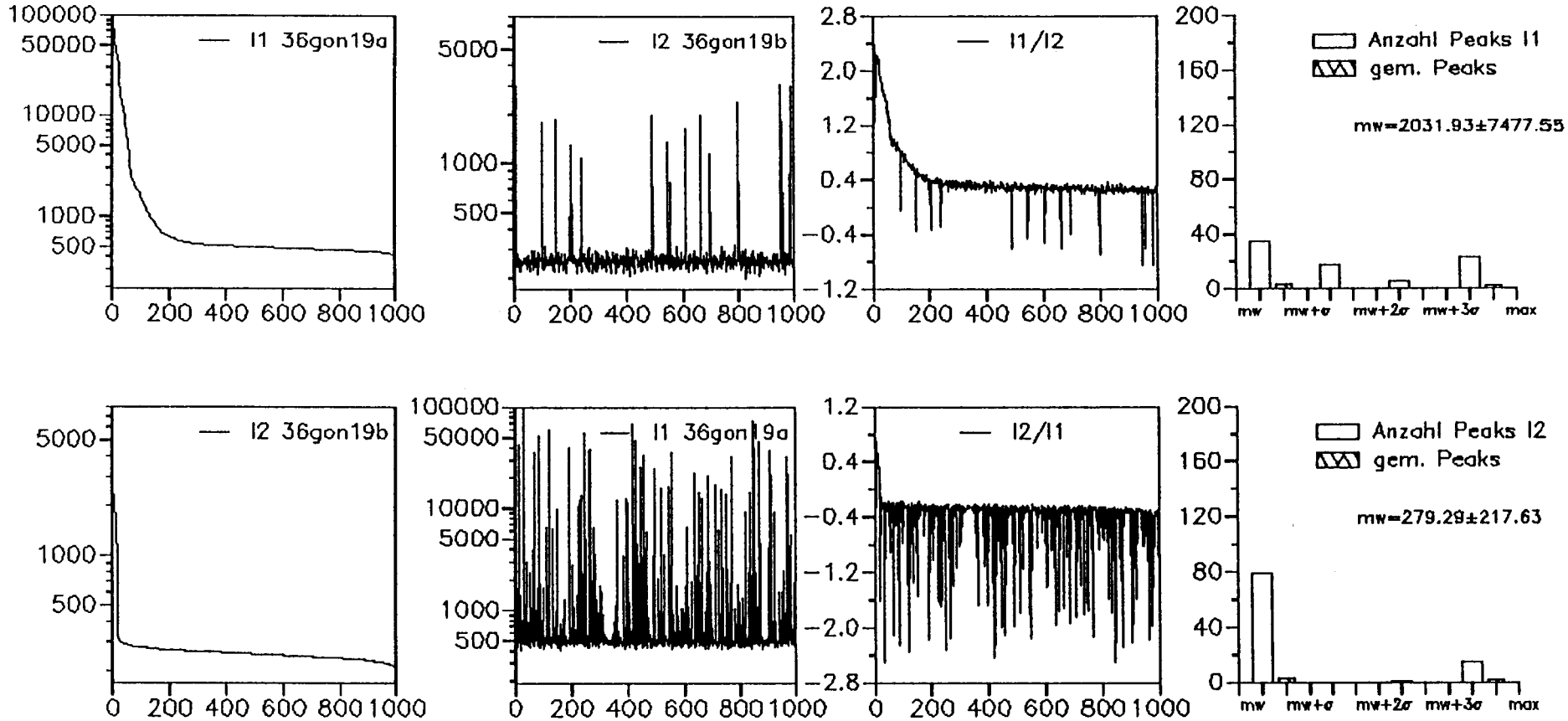
Gonyaulax, Δt=1s, d=7.5mm, without contact, 36gon17a, 36gon17b



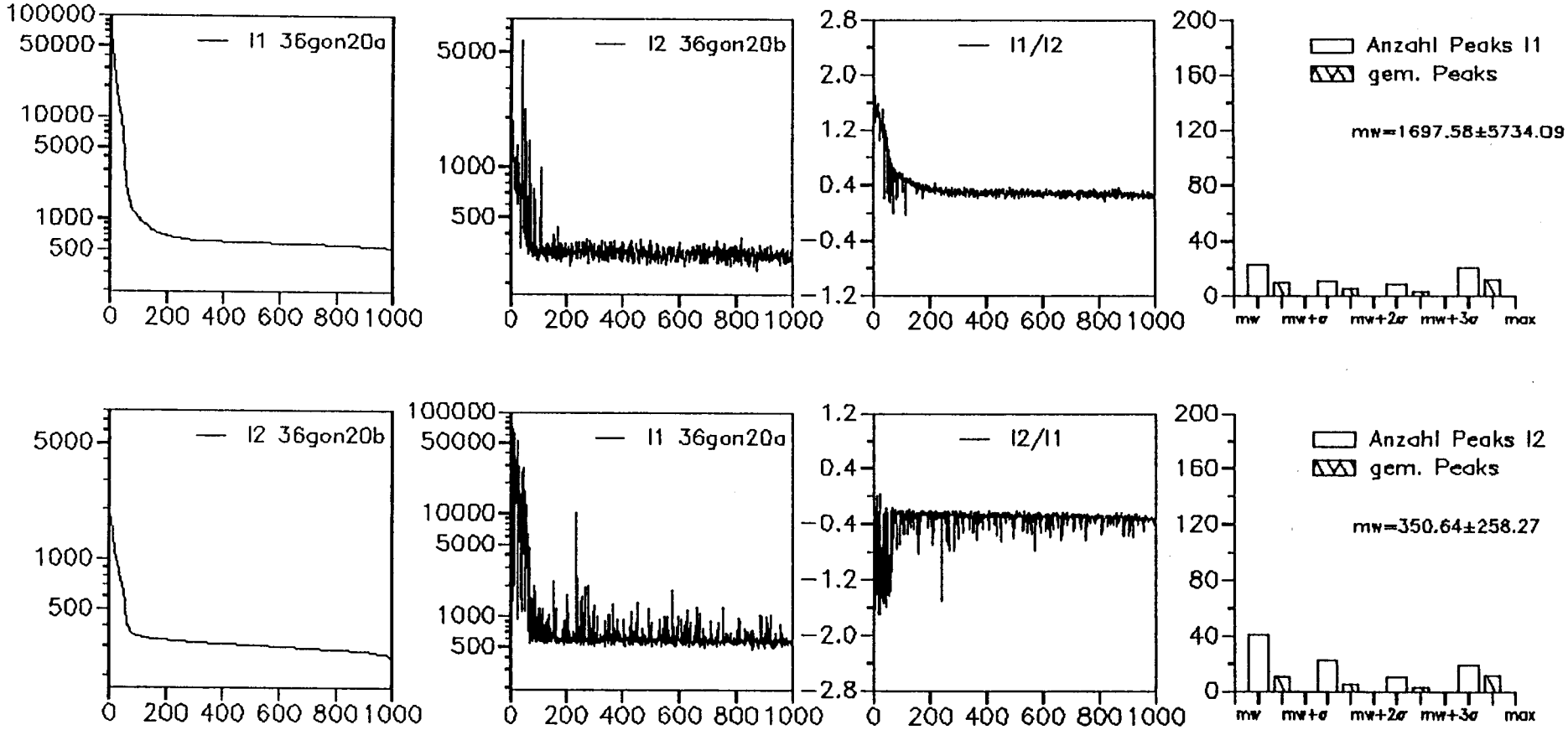
Gonyaulax, Δt=1s, d=7.5mm, with contact, 36gon18a, 36gon18b



Gonyaulax, Δt=1s, d=7.5mm, without contact, 36gon19a, 36gon19b

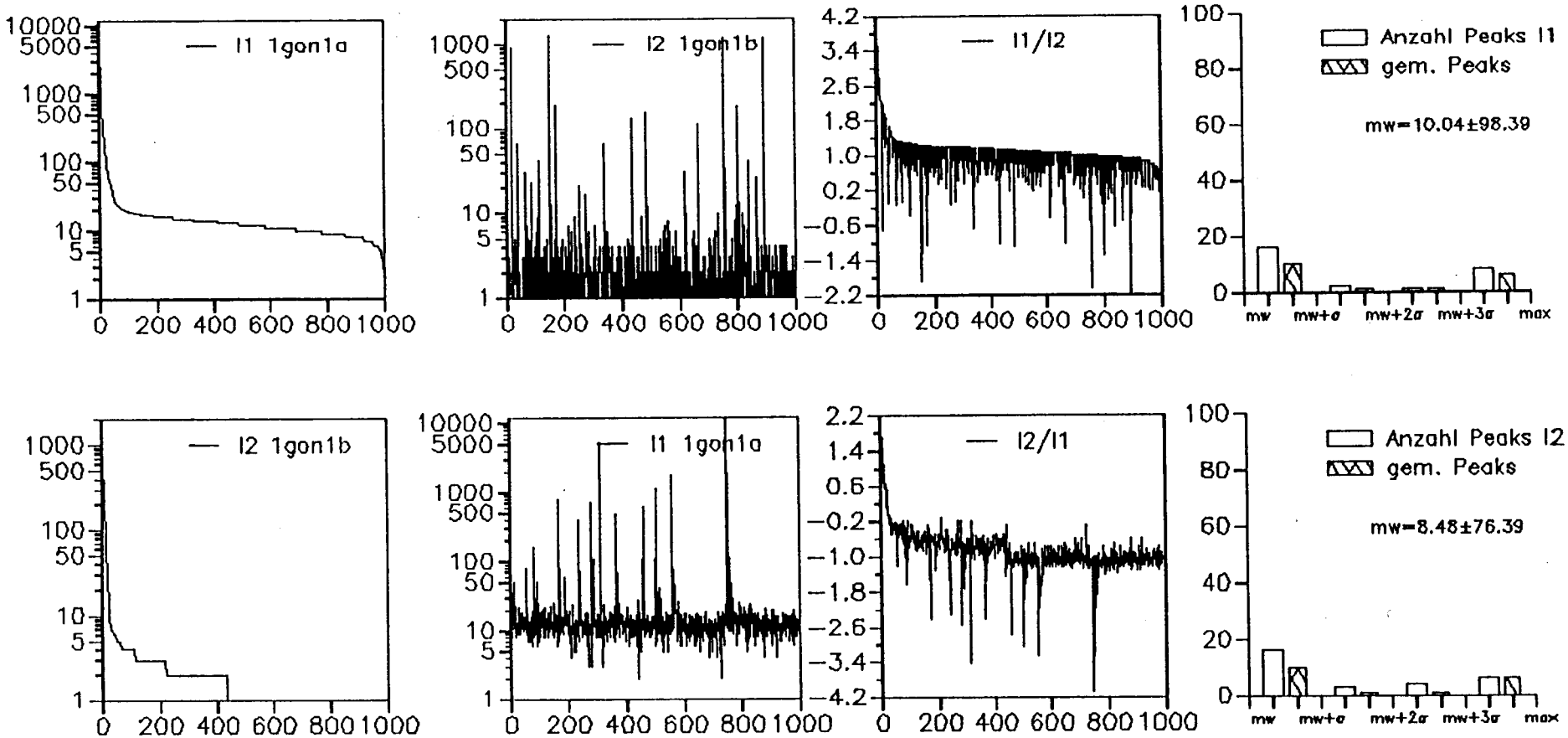


Gonyaulax, Δt=1s, d=7.5mm, with contact, 36gon20a, 36gon20b

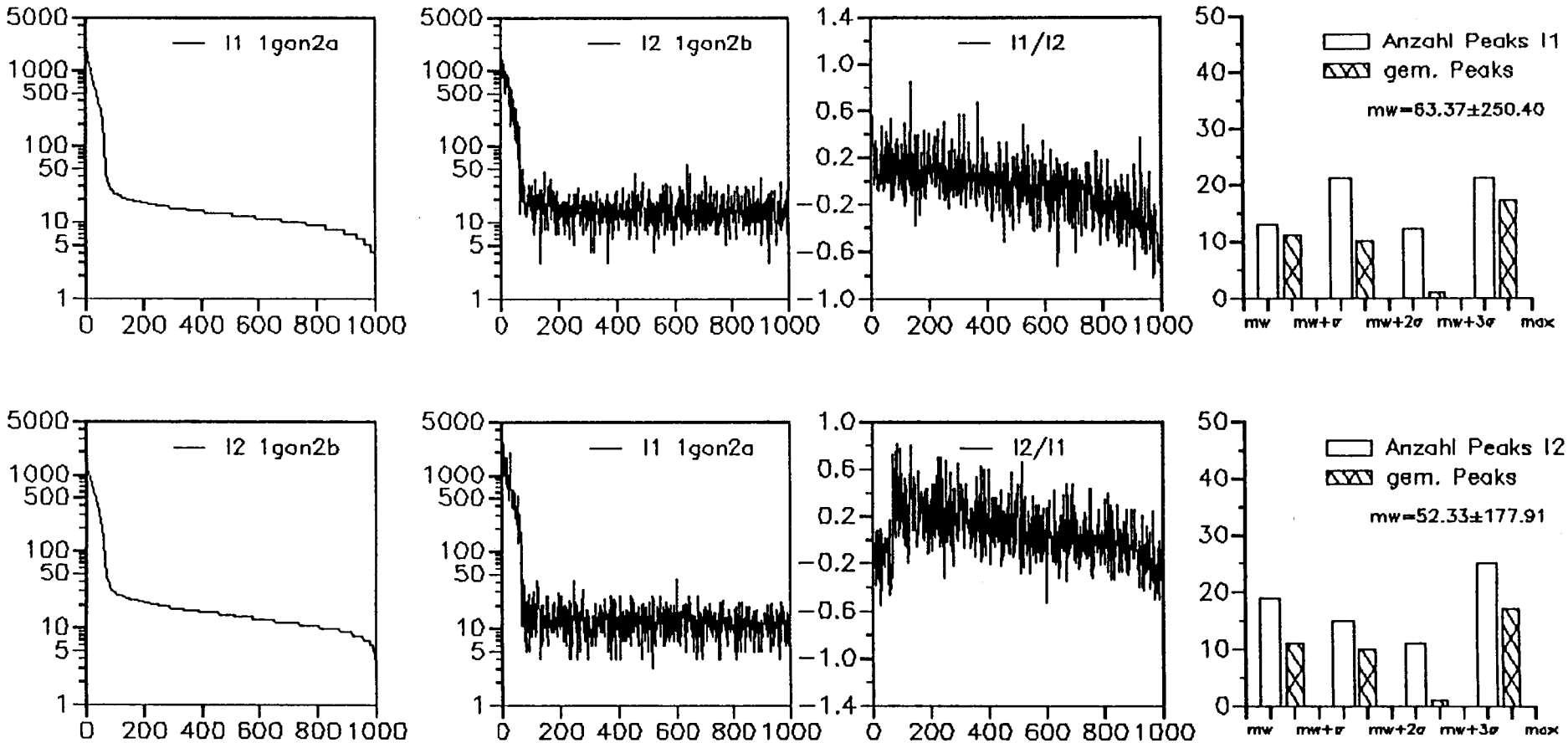


Figures 2

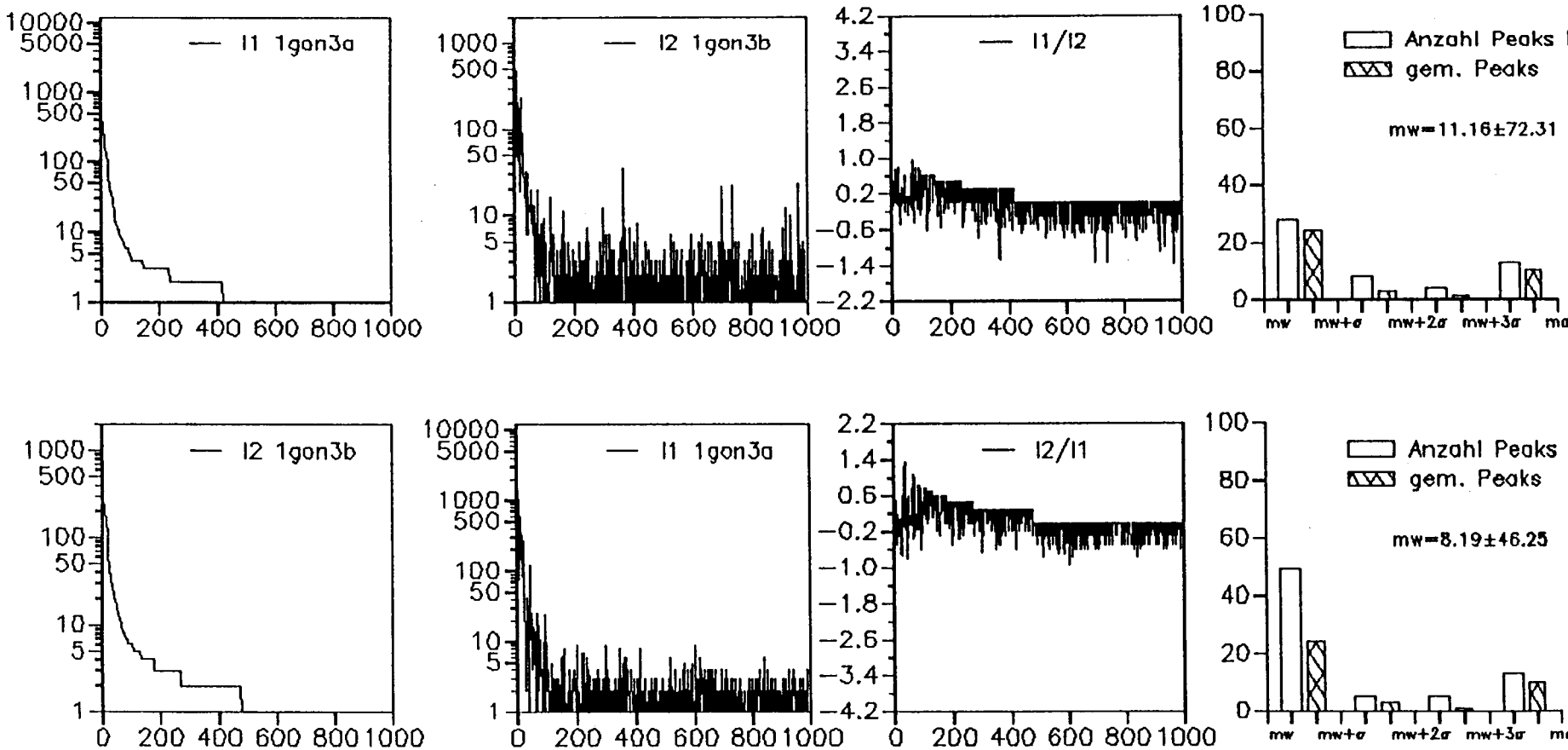
Gonyaulax, Δt=100ms, 1. Kuev., in der Mitte vom Sichtfenster, 1gon1a, 1gon1b



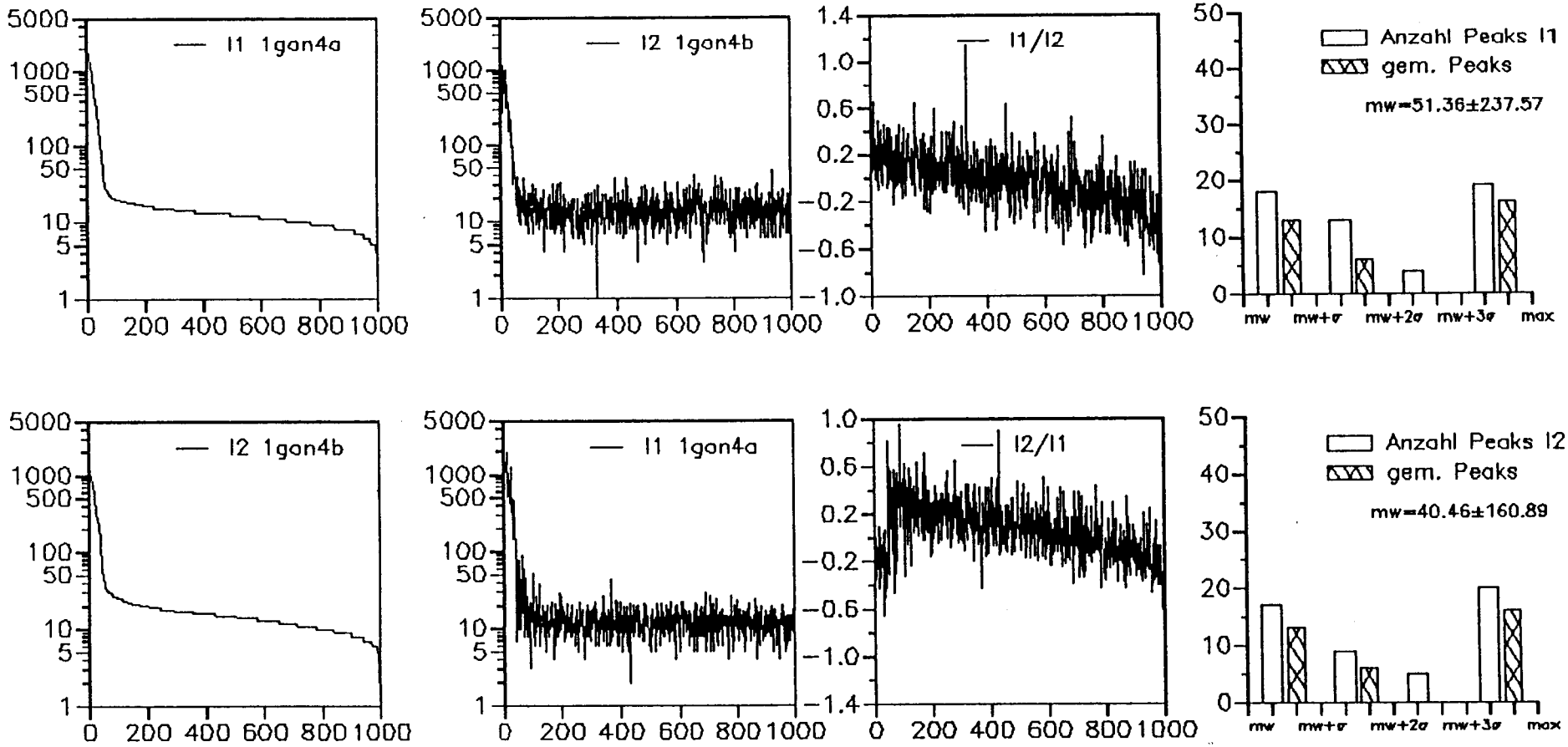
Gonyaulax, Δt=1s, 1. Kuev., in der Mitte vom Sichtfenster, 1gon2a, 1gon2b



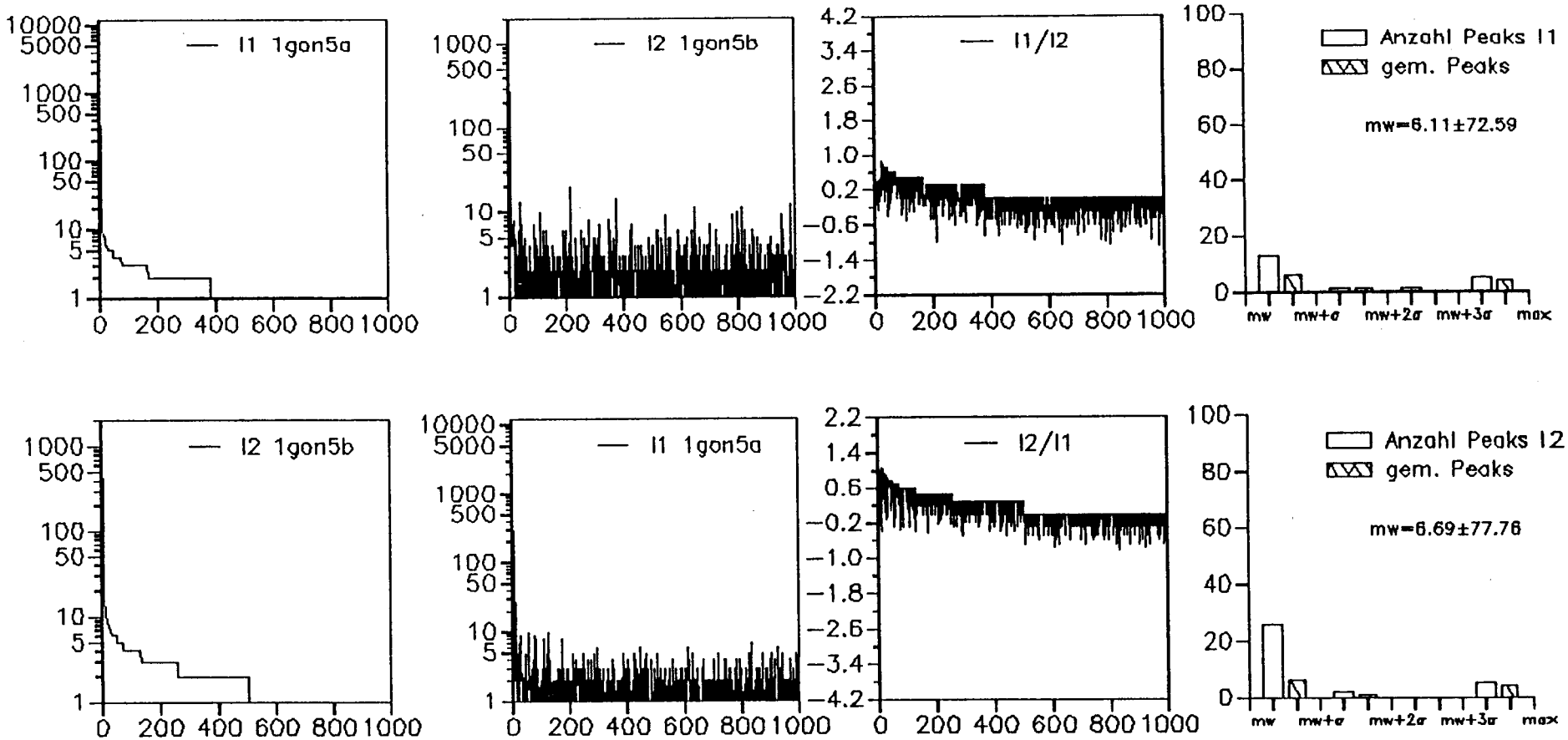
Gonyaulax, Δt=100ms, 1. Kuev., in der Mitte vom Sichtfenster, 1gon3a, 1gon3b



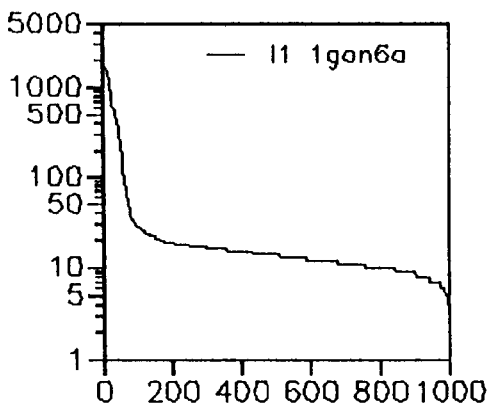
Gonyaulax, Δt=1s, 1. Kuev., in der Mitte vom Sichtfenster, 1gon4a, 1gon4b

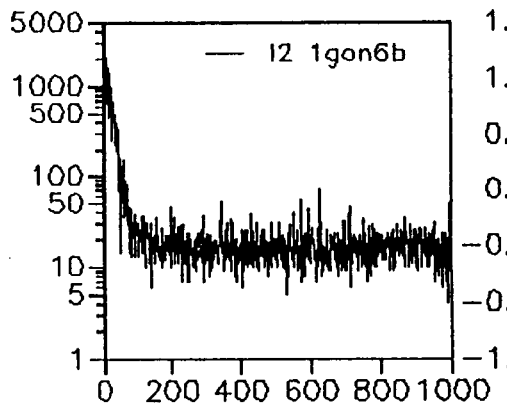


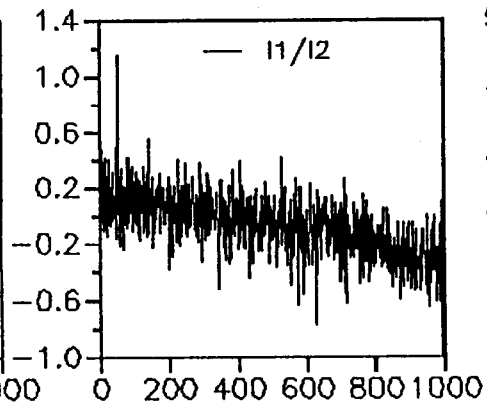
Gonyaulax, Δt=100ms, 1. Kuev., in der Mitte vom Sichtfenster, 1gon5a, 1gon5b

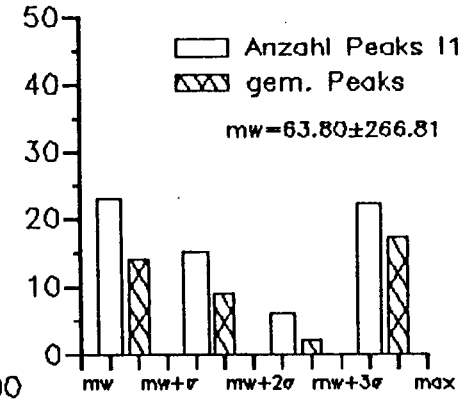


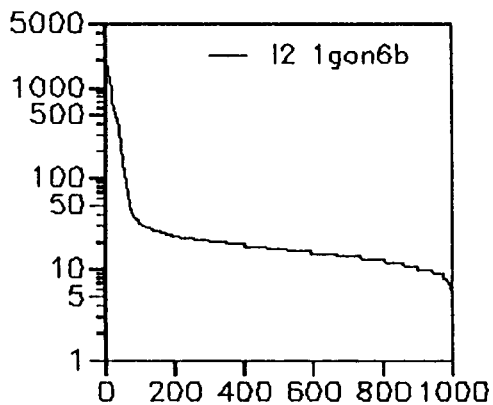
Gonyaulax, Δt=1s, 1. Kuev., in der Mitte vom Sichtfenster, 1gon6a, 1gon6b

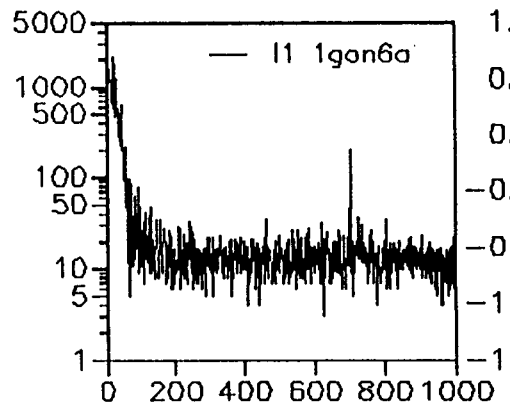


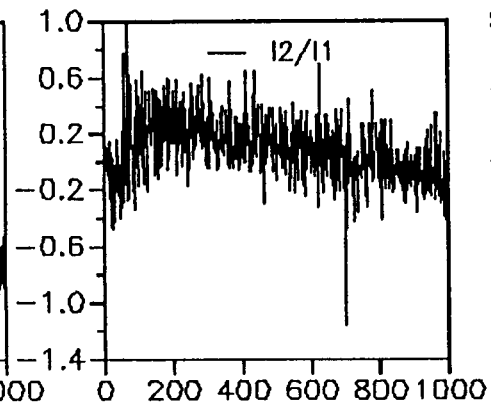


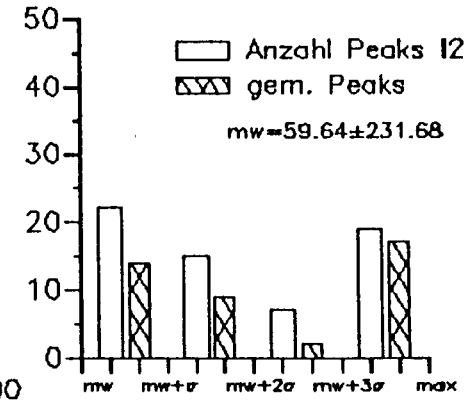




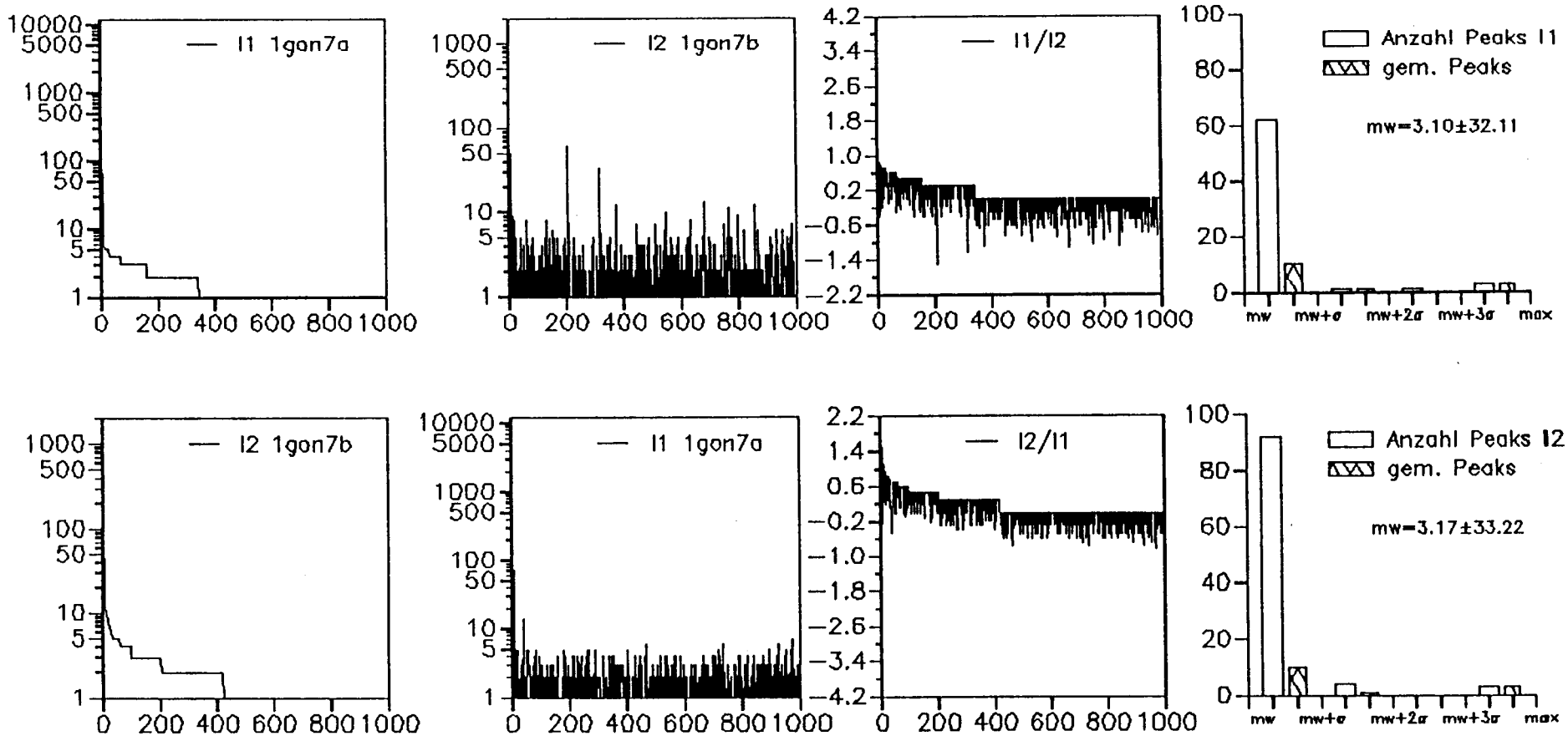




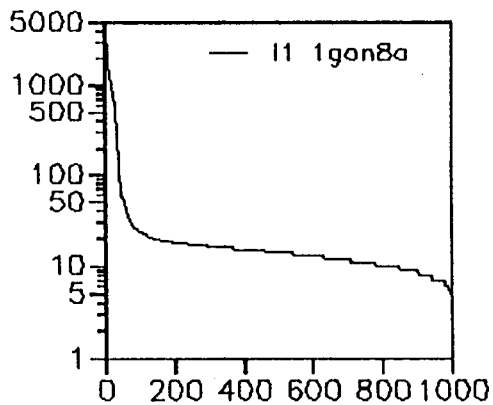


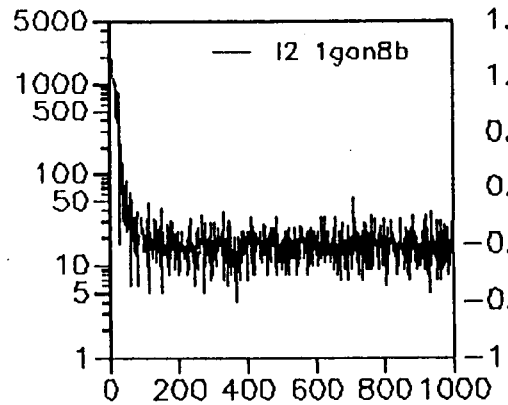


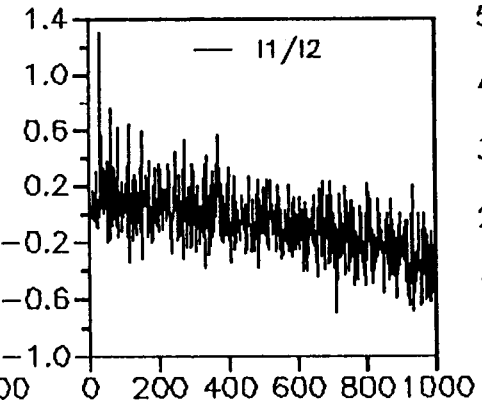
Gonyaulax, Δt=100ms, 1. Kuev., in der Mitte vom Sichtfenster, 1gon7a, 1gon7b

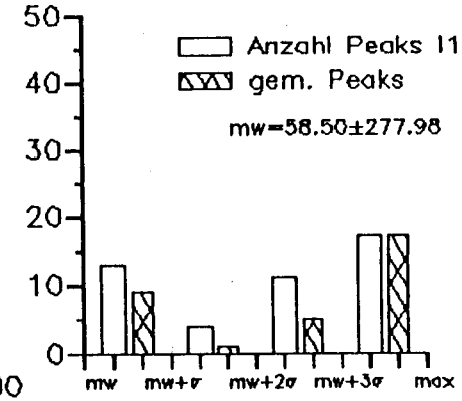


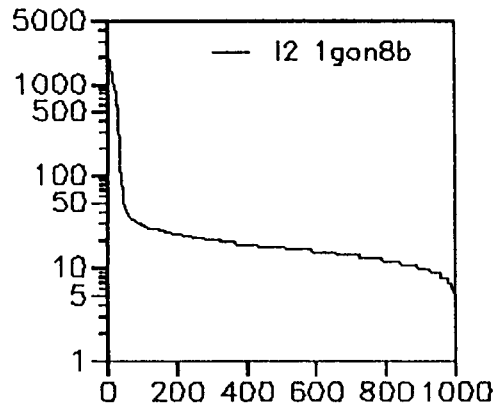
Gonyaulax, Δt=1s, 1. Kuev., in der Mitte vom Sichtfenster, 1gon8a, 1gon8b

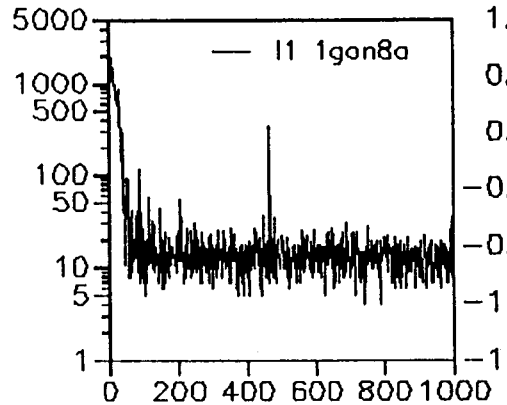


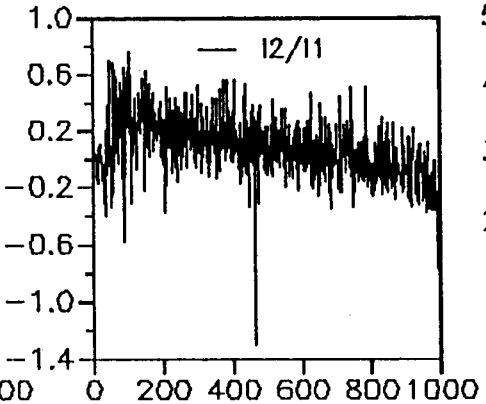


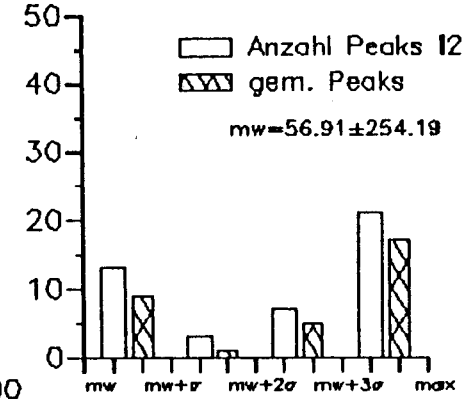




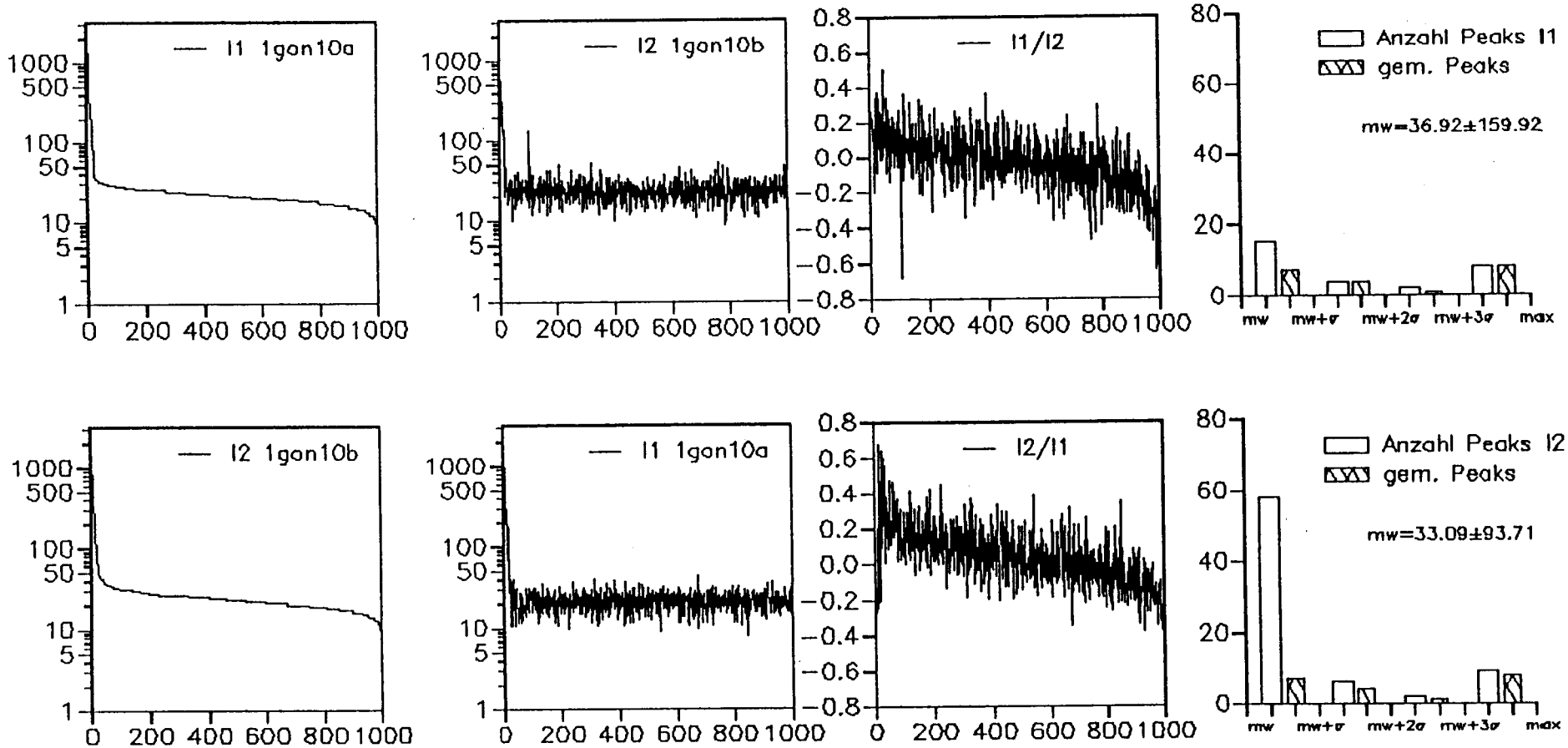




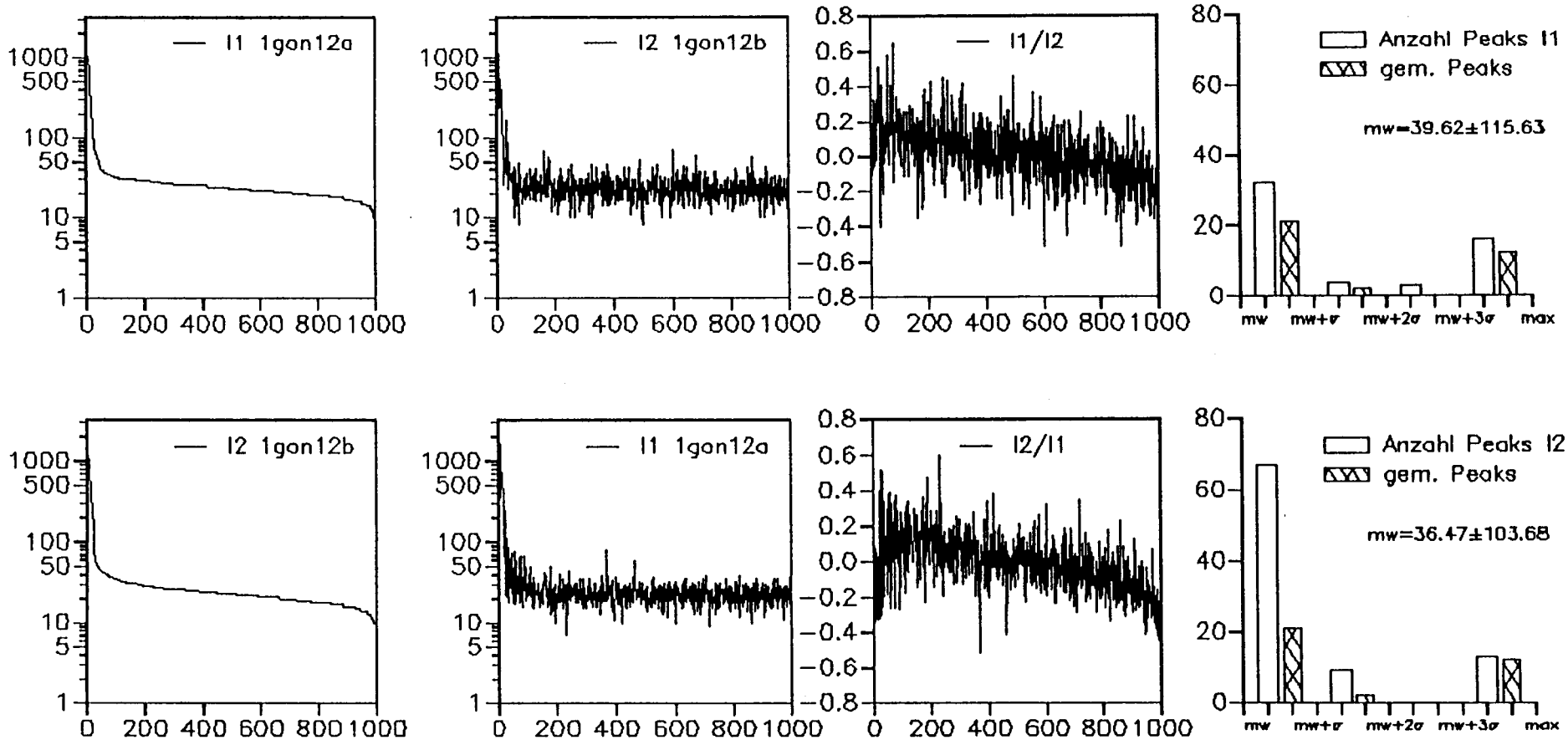




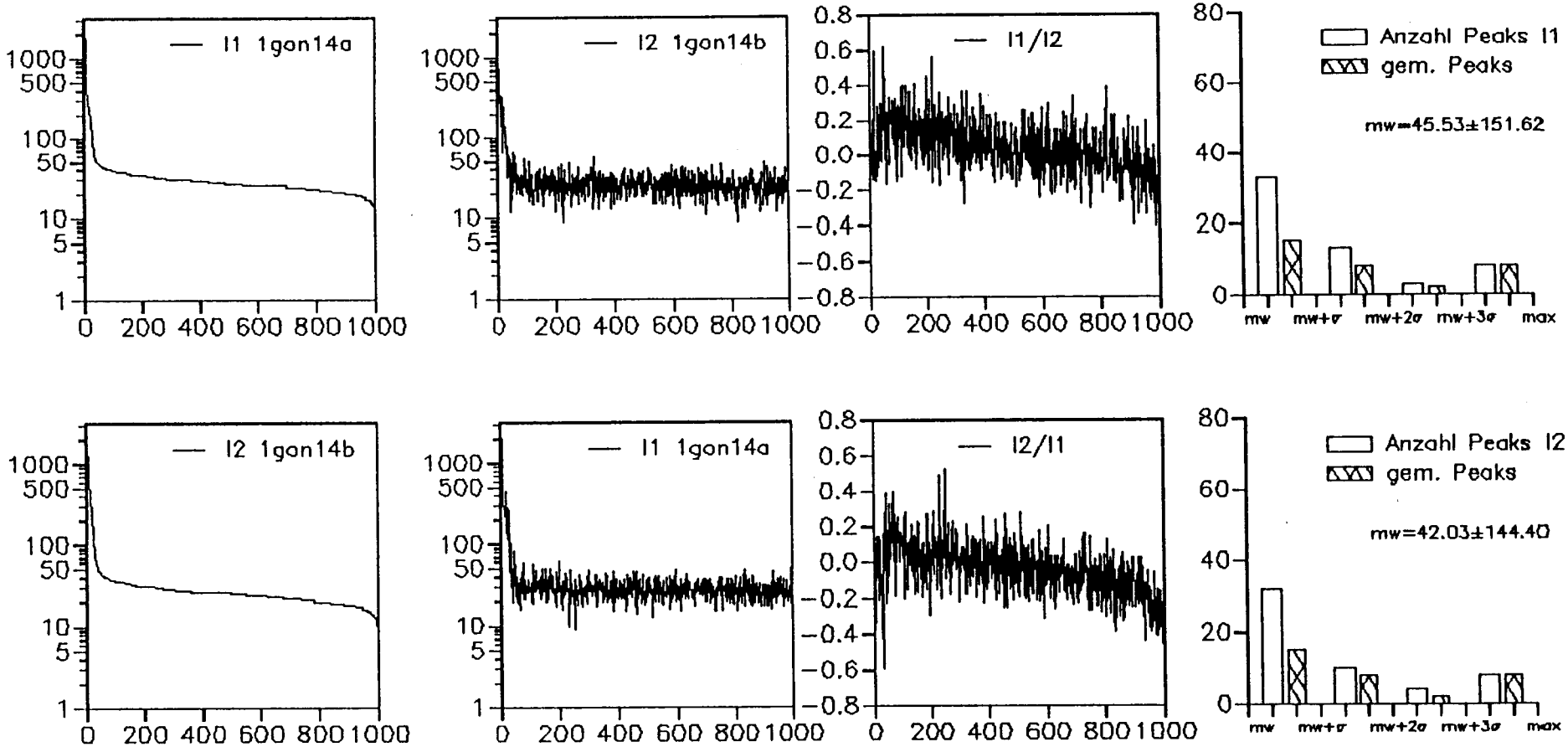
Gonyaulax, Δt=1s, 2. Kuev., in der Mitte vom Sichtfenster, 1gon10a, 1gon10b



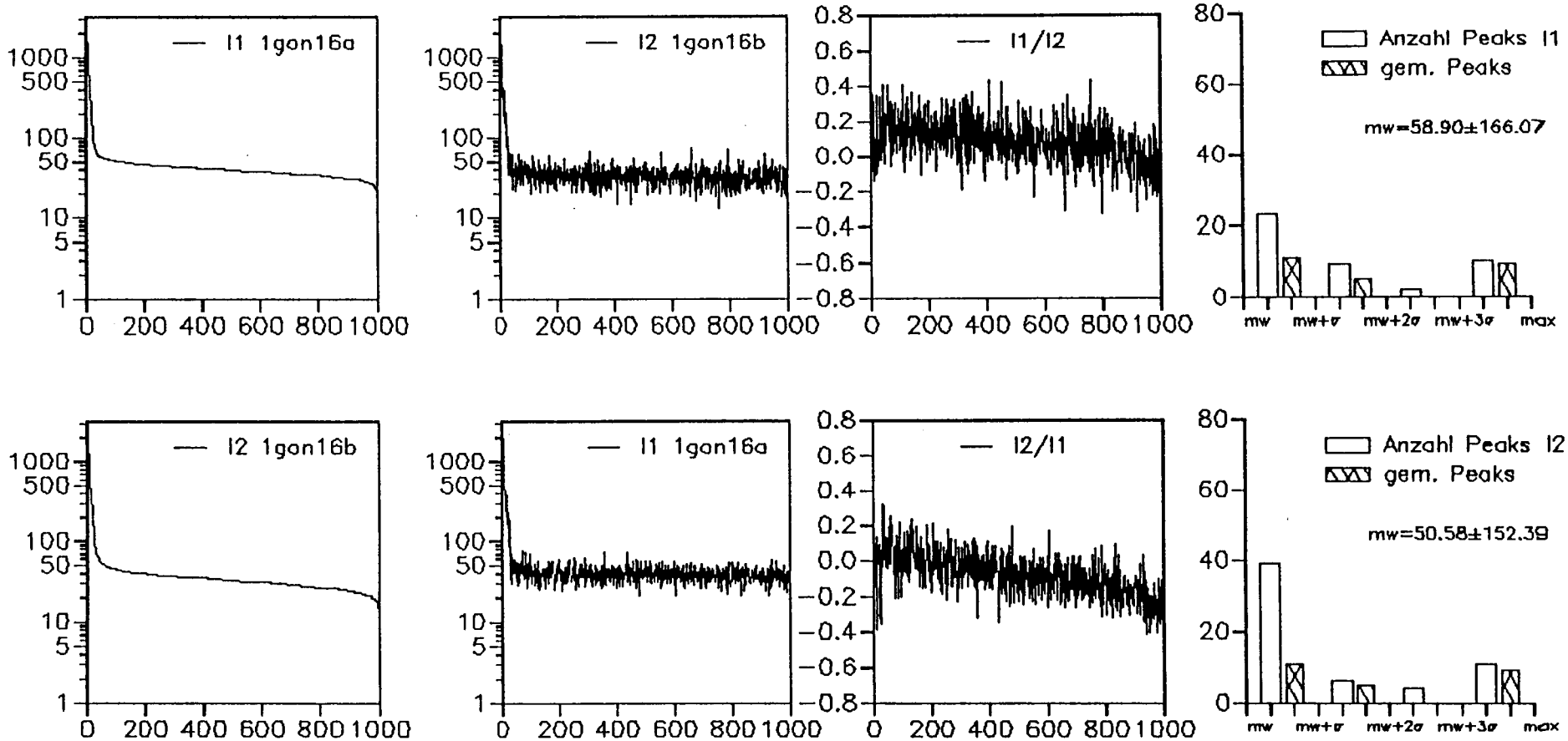
Gonyaulax, Δt=1s, 2. Kuev., in der Mitte vom Sichtfenster, 1gon12a, 1gon12b



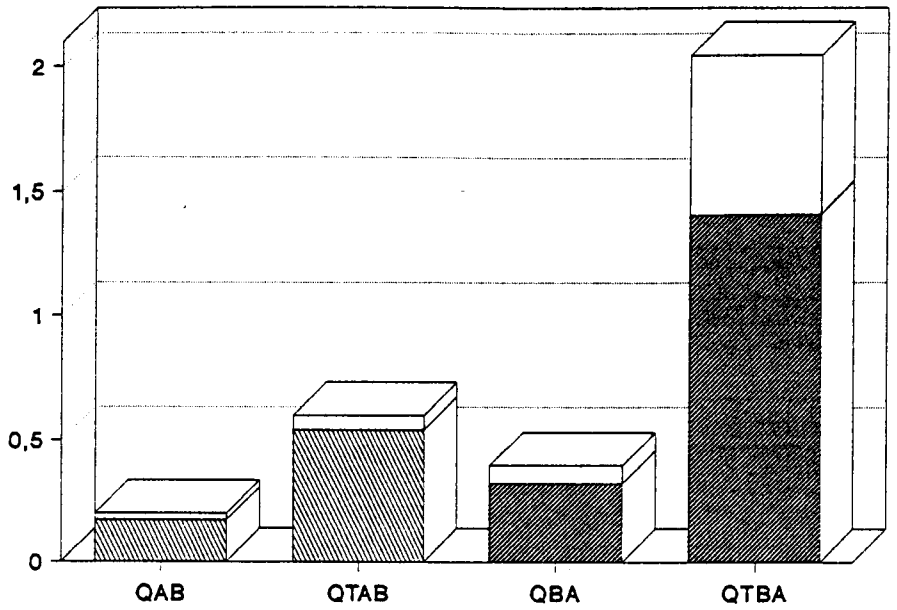
Gonyaulax, Δt=1s, 2. Kuev., in der Mitte vom Sichtfenster, 1gon14a, 1gon14b



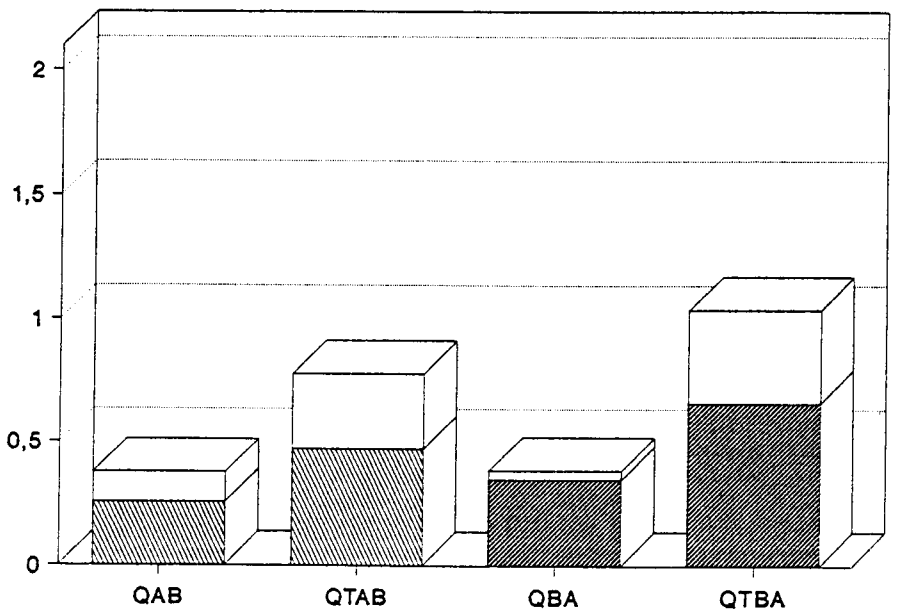
Gonyaulax, Δt=1s, 2. Kuev., in der Mitte vom Sichtfenster, 1gon16a, 1gon16b



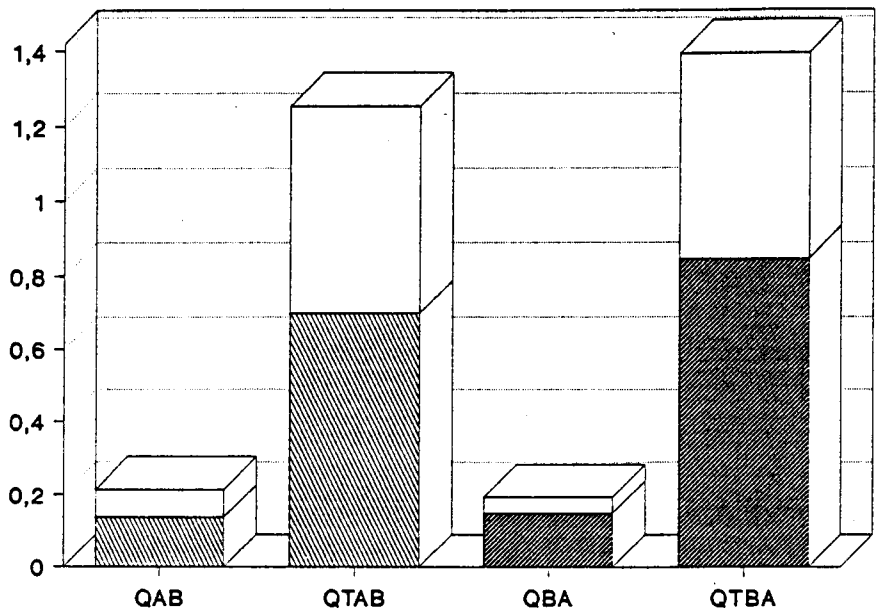
Gonyaulax, Δt=1s, d=7.5mm



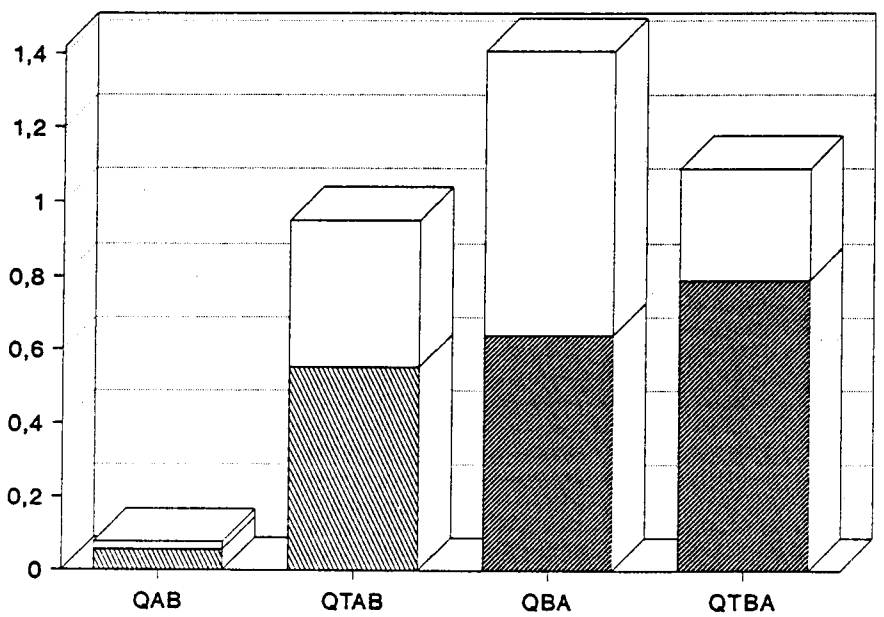
Gonyaulax, Δt=1s, d=15mm



Gonyaulax, Δ t=100ms, d=7.5mm



Gonyaulax, Δ t=100ms, d=15mm



Data file: c:\css\qony\GONYN.CSS [40 cases with 7 variables]
Table 4: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB|QTAB (-9999.)	4 QBA|QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=1) 1s, 7.5 mm

SD = SQRT (SUM (d**2)/(n-1))

CSS/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 10 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB|QTAB	-12.638	.000	5	5	.169964	.539920
QBA|QTBA	-3.780	.005	5	5	.321941	1.408327

CSS/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 10 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB|QTAB	.027034	.059616	4.863	.155
QBA|QTBA	.074974	.638226	72.464	.001

S/3: BASIC STATISTICS

ta file: c:\css\gony\GONYN.CSS [40 cases with 7 variables]
ble 4: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

RIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

SE SELECTION CONDITION:
Include if:
(v5=2) and (v6=1) 100ms, 7.5mm

) = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 10 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-2.233	.056	5	5	.136604	.697999
QBA¦QTBA	-2.840	.022	5	5	.149238	.846372

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 10 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.076895	.556982	52.467	.002
QBA¦QTBA	.044092	.547197	154.018	.000

data file: c:\css\gony\GONYN.CSS [40 cases with 7 variables]
Table 4: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=2) 1s, 15 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 10 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-1.481	.177	5	5	.253075	.469379
QBA¦QTBA	-1.833	.104	5	5	.345694	.657596

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 10 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.121755	.302970	6.192	.105
QBA¦QTBA	.036567	.378629	107.211	.001

data file: c:\css\gony\GONYN.CSS [40 cases with 7 variables]
Table 4: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

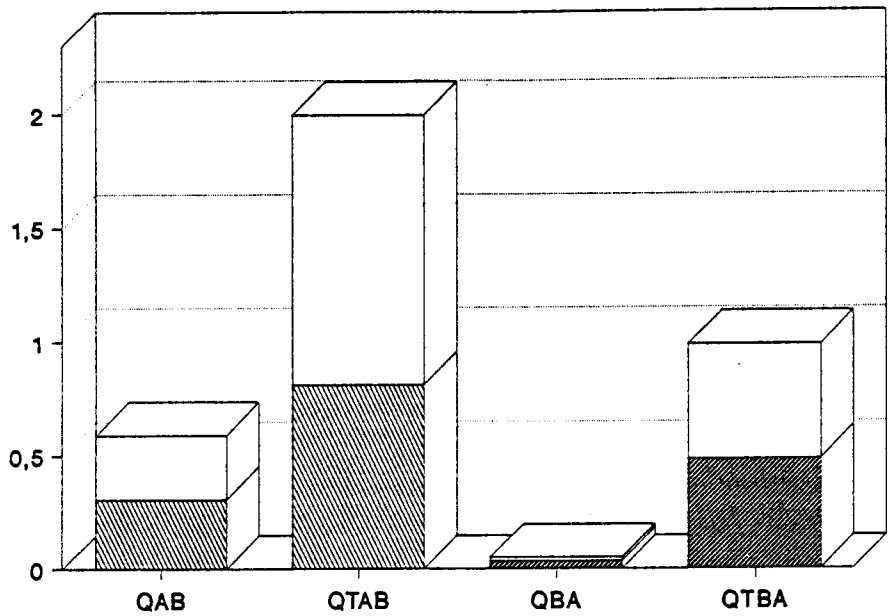
CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=2) 100ms, 15mm

SD = SQRT (SUM (d**2)/(n-1))

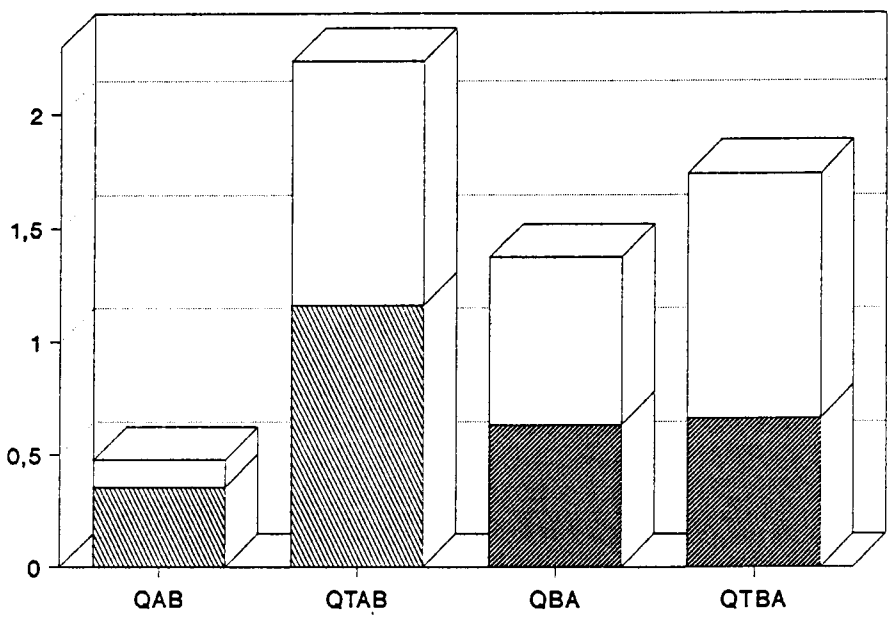
css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 10 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-2.771	.024	5	5	.057469	.552380
QBA¦QTBA	-.410	.693	5	5	.638855	.789934

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 10 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.021583	.398837	341.472	.000
QBA¦QTBA	.768345	.297541	6.668	.093

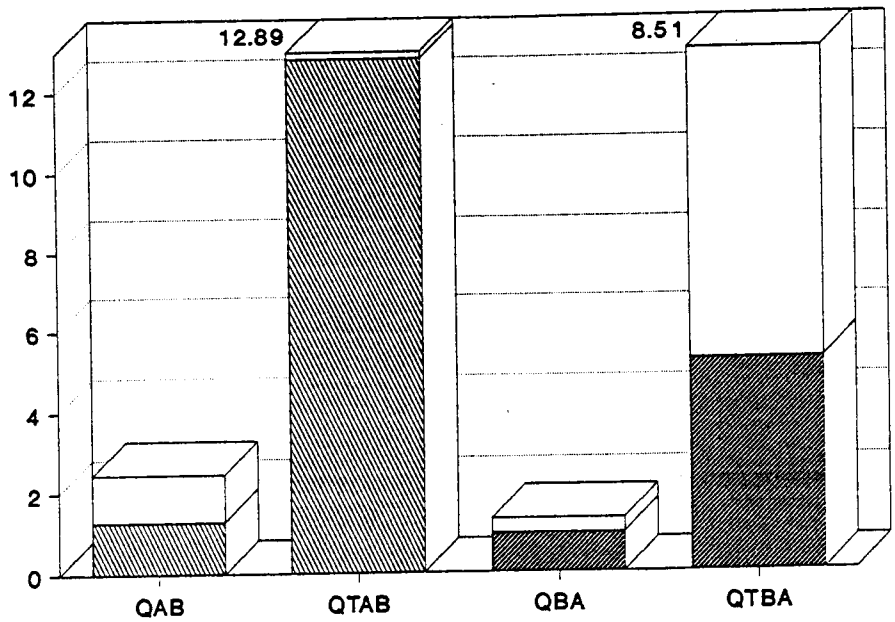
Lunula, Δt=1s, d=7.5mm



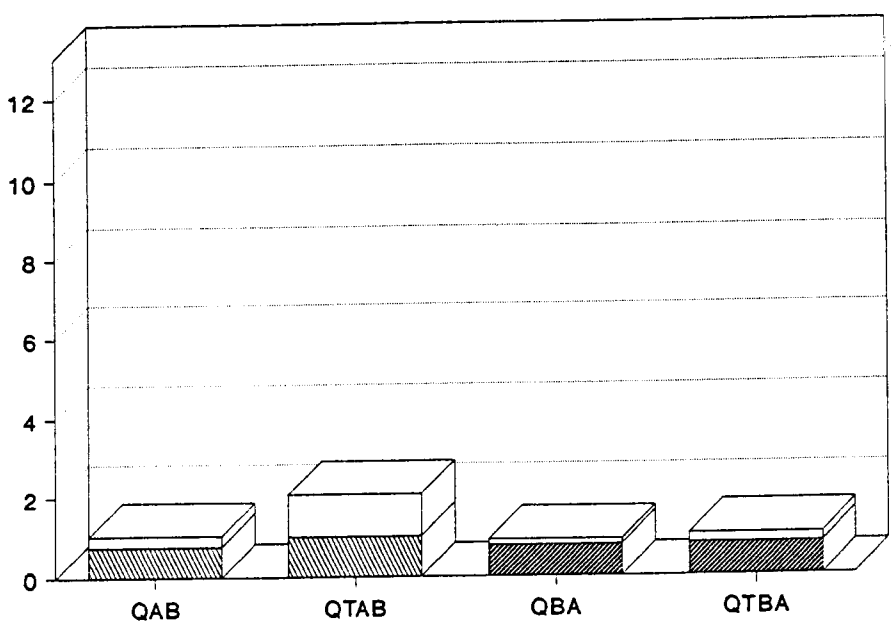
Lunula, Δt=1s, d=15mm



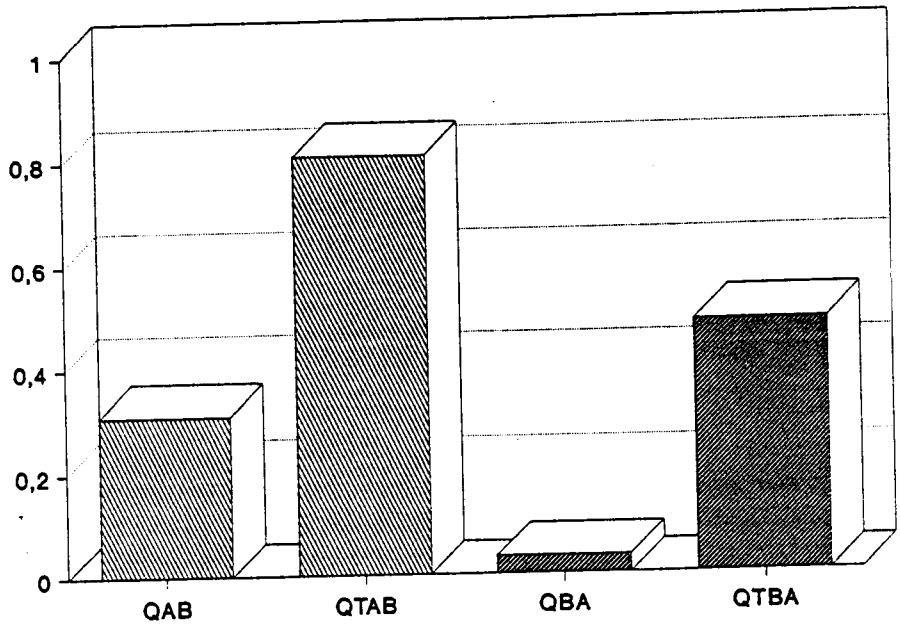
Lunula, Δ t=100ms, d=7.5mm



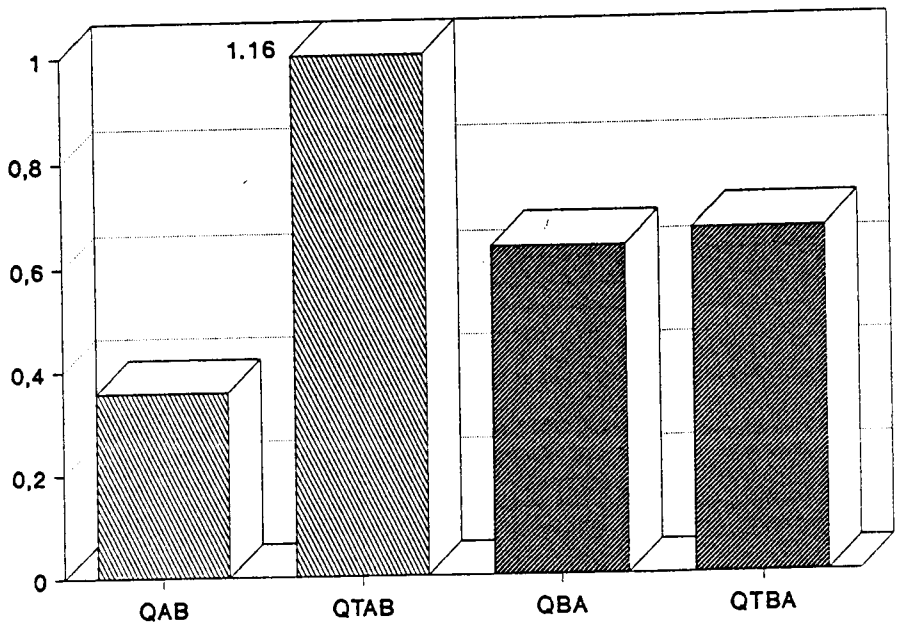
Lunula, Δ t=100ms, d=15mm

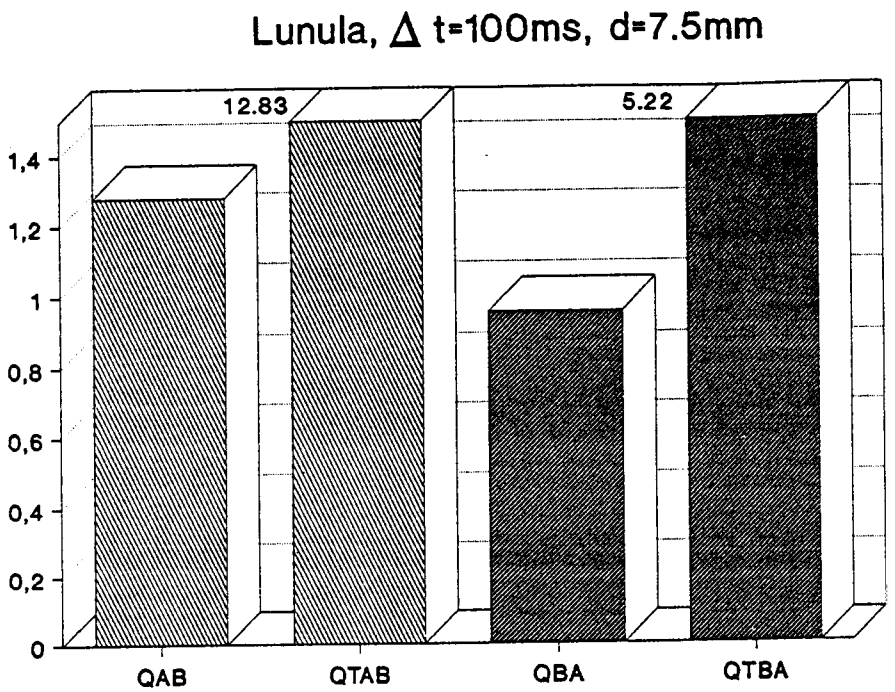


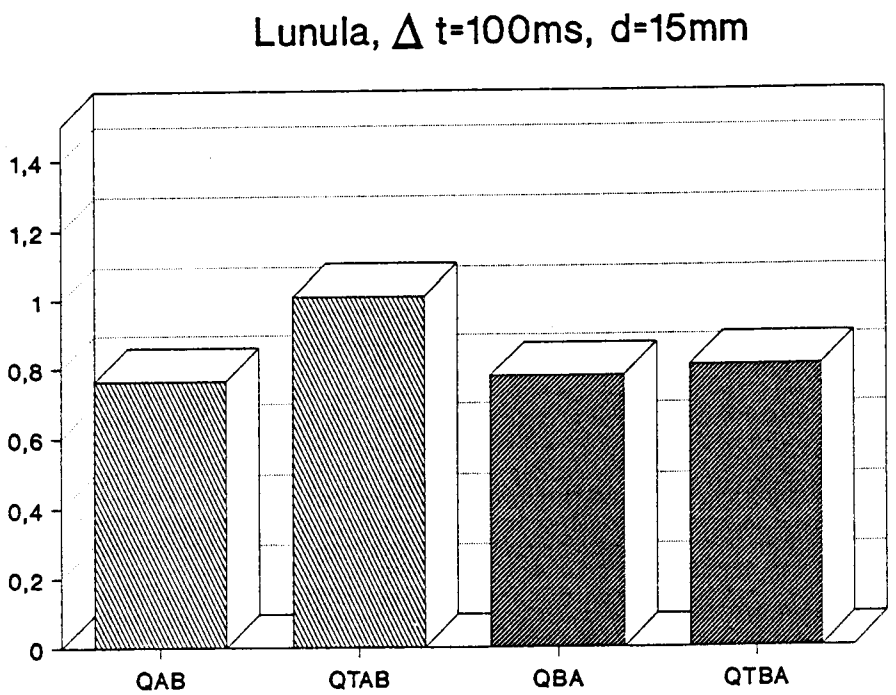
Lunula, Δt=1s, d=7.5mm



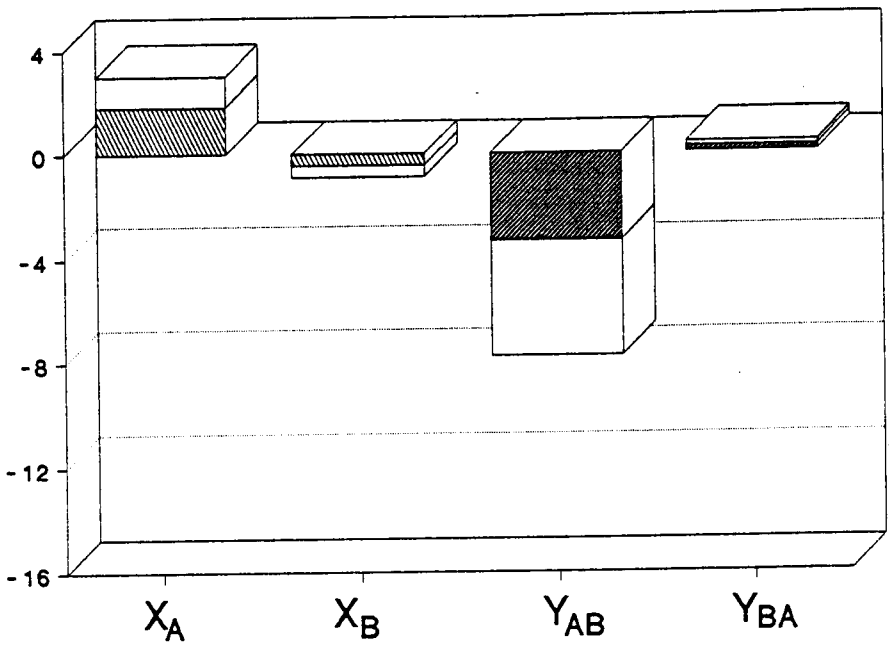
Lunula, Δt=1s, d=15mm



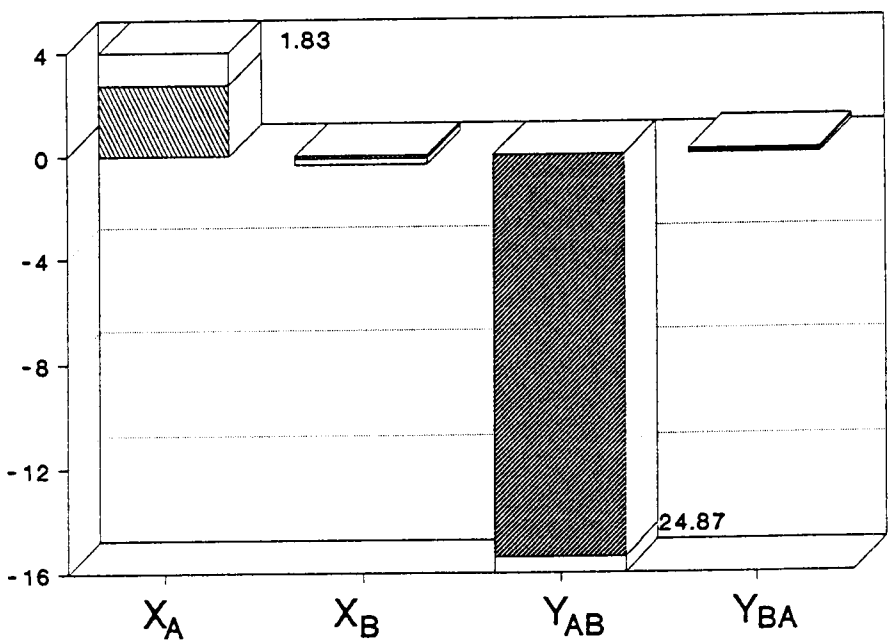

Lunula, Δ t=100ms, d=7.5mm
12.83
5.22
1,4
1,2
1
0,8
0,6
0,4
0,2
0
QAB
QTAB
QBA
QTBA


Lunula, Δ t=100ms, d=15mm
1,4
1,2
1
0,8
0,6
0,4
0,2
0
QAB
QTAB
QBA
QTBA

Lunula, Δt=1s, d=7.5mm



Lunula, Δ t=1s, d=15mm



data file: c:\css\QABLUN.CSS [32 cases with 7 variables]
Lunula

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=1) 100 ms, 7.5 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-1.785	.125	4	4	1.280000	12.83003
QBA¦QTBA	-1.002	.355	4	4	.955000	5.22000

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	1.174252	12.89052	120.509	.003
QBA¦QTBA	.346073	8.50574	604.072	.000

data file: c:\css\QABLUN.CSS [32 cases with 7 variables]
Lunula

VARIABLE LIST and missing data values:

3 QAB|QTAB (-9999.)	4 QBA|QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=1) ds 7.5 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB|QTAB	-.819	.444	4	4	.307500	.807500
QBA|QTBA	-1.795	.123	4	4	.035000	.485000

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB|QTAB	.281943	1.187473	17.739	.041
QBA|QTBA	.017321	.501099	837.000	.000

data file: c:\css\QABLUN.CSS [32 cases with 7 variables]
Lunula

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=2) 15, 15 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-1.483	.189	4	4	.357500	1.160025
QBA¦QTBA	-.046	.965	4	4	.635000	.665000

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.122304	1.075138	77.276	.005
QBA¦QTBA	.738941	1.073763	2.112	.555

data file: c:\css\QABLUN.CSS [32 cases with 7 variables]
Lunula

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=2) 100 ms, 15 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-.456	.665	4	4	.762500	1.010000
QBA¦QTBA	-.222	.832	4	4	.775000	.805000

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.268002	1.052932	15.436	.050
QBA¦QTBA	.131276	.236291	3.240	.360

ata file: c:\css\gony\XYLUN.CSS [16 cases with 8 variables]
unula

ARIABLE LIST and missing data values:

3	XA (-9999.)	4	YAB (-9999.)	5	XB (-9999.)
6	YBA (-9999.)				

ASE SELECTION CONDITION:
Include if:
(v0 <= 4) 15, 7.5 mu

D = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
XA	4	.62600	3.409000	1.83400	.593601	1.187202
YAB	4	-9.83900	.321000	-3.31850	2.234491	4.468982
XB	4	-1.71300	.250000	-.43925	.436609	.873219
YBA	4	.06000	.420000	.22200	.081250	.162499

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
XA	4.383291	-.7153
YAB	6.277792	-12.9148
XB	1.435821	-2.3143
YBA	.570936	-.1269

file: c:\css\gony\XYLUN.CSS [16 cases with 8 variables]

a

BLE LIST and missing data values:

3	XA (-9999.)	4	YAB (-9999.)	5	XB (-9999.)
6	YBA (-9999.)				

SELECTION CONDITION:

lude if:

0 > 8) and (v0 <= 12) 15,15 mn

= SQRT (SUM (d**2)/(n-1))

ss/3: asic tats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
XA	4	.1600	4.336000	2.7468	.91264	1.82528
YAB	4	-51.7980	4.290000	-15.3888	12.43419	24.86837
XB	4	-.5560	.549000	-.1015	.23369	.46737
YBA	4	.0200	.170000	.1250	.03558	.07115

ss/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
XA	6.66620	-1.1727
YAB	38.01136	-68.7889
XB	.90210	-1.1051
YBA	.27779	-.0278

ata file: c:\css\gony\LUNULA.CSS [32 cases with 15 variables]
unula, δt: 1=1s, 0.1=100ms, M¦O: 1=o.Sicht, 2=m.Sicht, DMM:7.5mm, 15mm

	1 δT	2 M¦O	3 DMM	4 I1Q	5 SIG1	6 I2Q	7 SIG2	8 I1DI2
1	1.0	1	7.5	524.12	7284.00	36.63	254.73	12.80
2	1.0	2	7.5	340.12	4564.15	40.76	443.75	9.43
3	1.0	1	7.5	184.46	48.72	20.97	173.55	14.52
4	1.0	2	7.5	204.51	326.25	41.62	298.07	8.30
5	1.0	1	7.5	222.03	1292.15	39.74	327.24	14.78
6	1.0	2	7.5	365.80	5455.72	25.27	159.22	10.11
7	1.0	1	7.5	149.83	26.34	49.96	376.62	8.22
8	1.0	2	7.5	201.47	722.41	30.46	92.56	8.05
9	.1	1	7.5	17.99	4.23	2.67	2.19	10.31
10	.1	2	7.5	155.44	1981.62	6.47	55.63	10.76
11	.1	1	7.5	203.37	1777.40	2.15	2.25	120.10
12	.1	2	7.5	16.30	4.12	2.27	1.74	10.40
13	.1	1	7.5	16.11	4.52	1.97	1.34	11.04
14	.1	2	7.5	18.21	55.67	4.14	42.04	10.04
15	.1	1	7.5	15.24	4.19	2.02	2.43	11.06
16	.1	2	7.5	87.44	987.64	2.67	8.28	13.30
17	1.0	1	15.0	192.61	149.31	56.53	635.92	10.69
18	1.0	2	15.0	363.04	3798.74	24.26	94.07	10.90
19	1.0	1	15.0	221.93	73.82	33.21	318.19	15.04
20	1.0	2	15.0	367.10	2596.85	29.30	82.54	11.65
21	1.0	1	15.0	337.70	353.00	18.65	7.24	20.97
22	1.0	2	15.0	498.17	1575.81	37.55	50.25	12.96
23	1.0	1	15.0	1680.23	27329.37	68.76	1068.23	21.78
24	1.0	2	15.0	564.09	501.66	72.16	35.78	8.45
25	.1	1	15.0	41.16	16.27	5.75	4.07	11.90
26	.1	2	15.0	41.64	15.45	5.67	4.06	11.25
27	.1	1	15.0	40.34	17.52	3.06	2.52	21.71
28	.1	2	15.0	36.63	12.87	3.69	2.68	15.16
29	.1	1	15.0	40.11	15.68	7.58	5.00	8.60
30	.1	2	15.0	36.75	11.98	4.55	6.12	13.27
31	.1	1	15.0	45.20	26.75	3.06	2.49	23.71
32	.1	2	15.0	45.19	20.27	4.22	2.84	15.51

data file: c:\css\gony\LUNULA.CSS [32 cases with 15 variables]
Lunula, &t: 1=1s, 0.1=100ms, M|O: 1=o.Sicht, 2=m.Sicht, DMM:7.5mm, 15mm

	9 SIGD12	10 I2DI1	11 SIGD21	12 I1MI2	13 SIG12
1	47.98	.22	1.58	595348.20	17051976.36
2	3.54	.12	.05	1988199.04	56981862.33
3	7.55	.13	1.27	3549.73	23767.54
4	3.82	.14	.07	99973.98	2631617.12
5	70.93	.27	2.31	7193.95	53457.72
6	3.93	.11	.05	841017.13	25386412.64
7	5.78	.35	2.75	7225.92	51698.76
8	3.41	.15	.08	61638.65	1058489.23
9	6.74	.16	.13	48.15	45.79
10	8.71	.15	.11	111058.12	2145958.62
11	1124.72	.11	.12	474.31	4766.53
12	6.03	.15	.12	37.40	32.71
13	5.98	.13	.10	31.74	24.25
14	5.85	.16	.14	2403.06	67938.81
15	5.99	.15	.21	30.13	32.31
16	17.03	.14	.12	8196.62	149521.31
17	14.60	.31	3.43	10738.15	118062.70
18	4.48	.10	.05	292233.81	6392155.27
19	7.92	.14	1.15	8651.93	92174.09
20	4.30	.10	.04	162473.06	4669774.00
21	26.65	.06	.03	6222.59	5671.95
22	8.00	.09	.03	78835.34	1887814.33
23	12.47	.06	.04	28886910.1	895902143.40
24	3.45	.14	.06	52595.19	217184.56
25	11.10	.15	.12	242.50	220.88
26	9.17	.14	.09	257.15	286.44
27	17.98	.09	.09	122.90	118.02
28	10.73	.11	.08	144.79	142.90
29	9.03	.21	.15	307.60	245.14
30	10.05	.12	.09	206.92	744.79
31	22.30	.08	.07	137.82	145.31
32	11.33	.10	.06	207.74	243.24

data file: c:\css\gony\LUNUL2.CSS [16 cases with 26 variables]
Lunula

	1 δT	2 DMM	15 QAB	16 QBA	17 SAA	18 SBB	19 ABS_XY	20 QTAB	21 QTBA
1	1.0	7.5	.07	.03	2.37	.81	.14	.11	.33
2	1.0	7.5	.51	.06	.81	.25	1.48	.38	1.20
3	1.0	7.5	.06	.02	.37	2.47	1.04	2.58	.38
4	1.0	7.5	.59	.03	.55	2.69	.06	.16	.03
5	.1	7.5	1.29	.85	.01	.17	101.73	17.32	1.36
6	.1	7.5	.01	1.00	155.67	.90	.00	.00	.05
7	.1	7.5	.98	1.40	.78	.23	22.93	5.19	17.94
8	.1	7.5	2.84	.57	.03	.57	50.34	28.81	1.53
9	1.0	15.0	.31	.01	.28	5.43	.48	2.58	.13
10	1.0	15.0	.54	.03	.37	1.28	.65	.84	.24
11	1.0	15.0	.30	1.00	.46	.25	4.94	1.22	2.27
12	1.0	15.0	.28	1.50	8.87	.91	.00	.00	.02
13	.1	15.0	.83	.75	.98	1.03	.60	.62	.59
14	.1	15.0	.60	.89	1.21	.69	.72	.50	.87
15	.1	15.0	1.11	.60	1.19	2.78	.93	2.58	1.11
16	.1	15.0	.51	.86	1.00	.53	.65	.34	.65

data file: c:\css\gony\XYLUN.CSS [16 cases with 8 variables]
Lunula

	1 &T	2 DMM	3 XA	4 YAB	5 XB	6 YBA	7 DA	8 DB
1	1.0	7.5	.626	.321	.250	.060	.02	.02
2	1.0	7.5	1.318	-1.843	-1.713	.420	13.96	14.33
3	1.0	7.5	3.409	-9.839	-.049	.123	.04	.02
4	1.0	7.5	1.983	-1.913	-.245	.285	32.30	32.27
5	.1	7.5	137.058	-865.258	-24.226	3.955	19.57	19.56
6	.1	7.5	.001	7.474	1.041	.000	-14.73	-.78
7	.1	7.5	5.645	-36.923	-28.688	3.765	14.76	14.85
8	.1	7.5	57.955	-393.960	-3.244	.605	13.91	13.82
9	1.0	15.0	3.620	-5.913	-.143	.168	1.66	1.61
10	1.0	15.0	2.871	-8.134	-.256	.170	9.03	8.92
11	1.0	15.0	4.336	-51.798	-.556	.142	7.45	6.99
12	1.0	15.0	.160	4.290	.549	.020	-1.26	-4.06
13	.1	15.0	.941	.505	-.529	.212	1.13	6.45
14	.1	15.0	.710	2.605	-.536	.132	-1.32	4.88
15	.1	15.0	.678	1.260	-.864	.277	-.57	8.29
16	.1	15.0	.654	5.109	-.171	.105	-.60	2.16

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
QAB	4	.055407	.589965	.306278	.140636	.281273
QBA	4	.021645	.055118	.034375	.007232	.014465
QTAB	4	.110644	2.579464	.806135	.593915	1.187829
QTBA	4	.032631	1.204029	.486560	.251210	.502420

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
QAB	.910258	-.29770
QBA	.065436	.00331
QTAB	3.356773	-1.74450
QTBA	1.565411	-.59229

100ms, 7.5 mm

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
QAB	4	.005361	2.84307	1.27974	.588720	1.17744
QBA	4	.571429	1.40000	.95440	.172970	.34594
QTAB	4	.000260	28.81333	12.83235	6.446013	12.89203
QTBA	4	.045144	17.94475	5.22043	4.254407	8.50881

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
QAB	3.80807	-1.2486
QBA	1.69724	.2116
QTAB	40.51553	-14.8508
QTBA	23.49149	-13.0506

1s, 15 mm

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
QAB	4	.276664	.542929	.356658	.062427	.124854
QBA	4	.014577	1.500000	.637340	.368173	.736345
QTAB	4	.001816	2.584540	1.160006	.538496	1.076991
QTBA	4	.017745	2.270042	.664833	.536950	1.073899

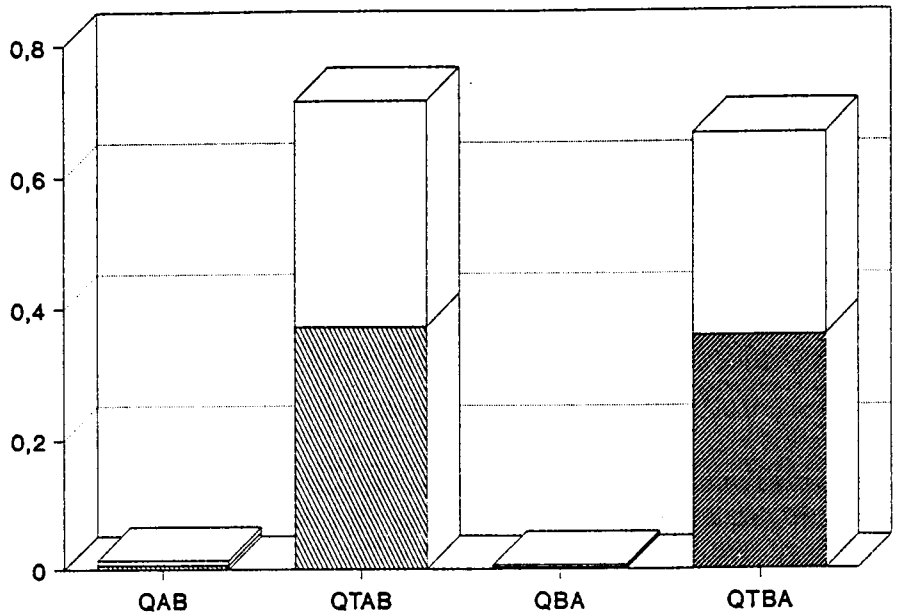
css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
QAB	.624759	.08856
QBA	2.218502	-.94382
QTAB	3.472640	-1.15263
QTBA	2.970829	-1.64116

100mg, 15min

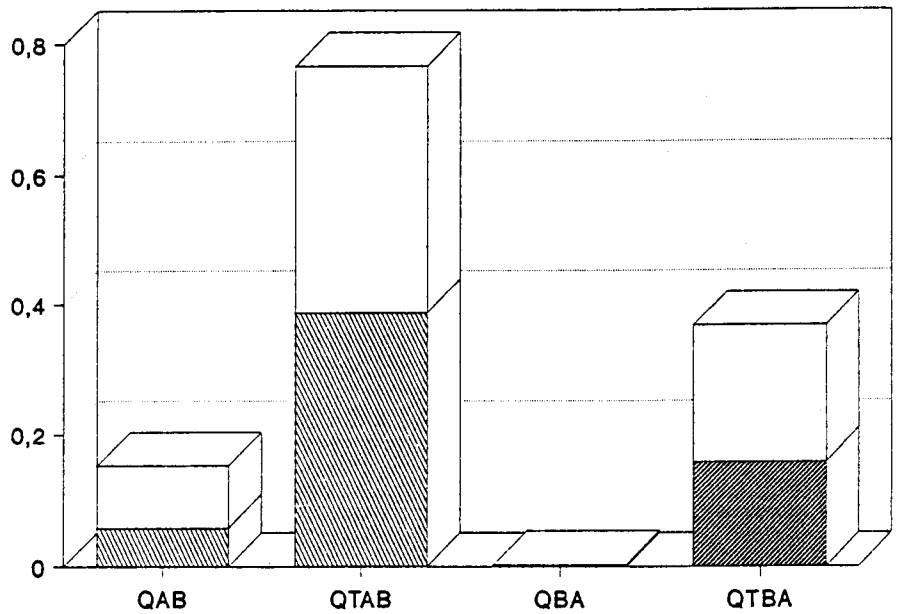
css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
QAB	4	.508072	1.112957	.760982	.135110	.270221
QBA	4	.600000	.888889	.774008	.065169	.130338
QTAB	4	.341768	2.581063	1.008754	.527120	1.054239
QTBA	4	.586247	1.107831	.804400	.118374	.236749

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
QAB	1.341230	.18073
QBA	1.053885	.49413
QTAB	3.272533	-1.25503
QTBA	1.312773	.29603

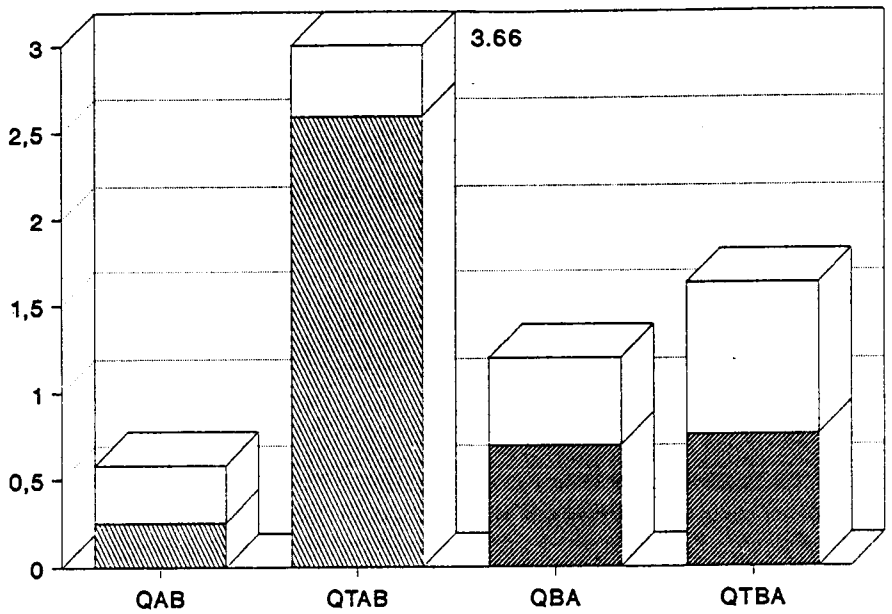
P. Elegans, Δt=1s, d=7.5mm



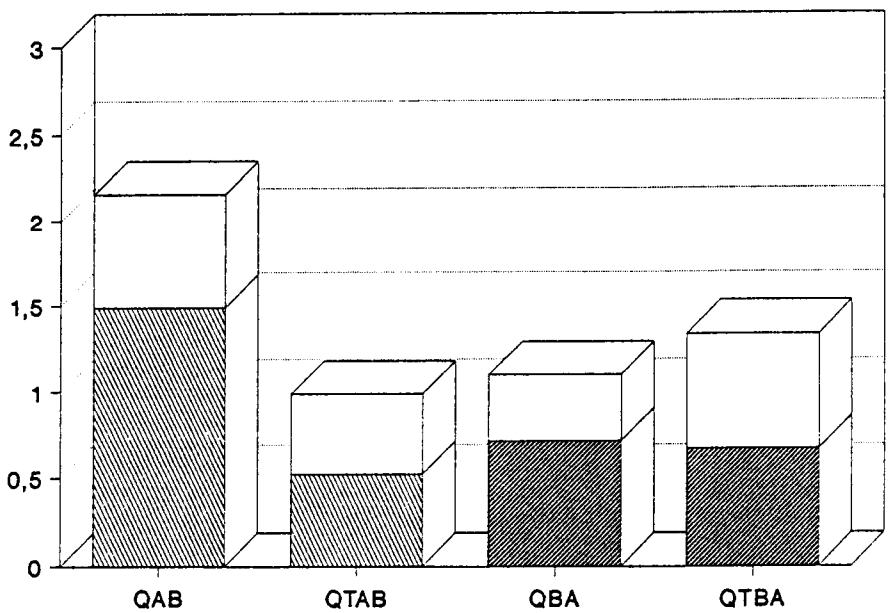
P. Elegans, Δt=1s, d=15mm



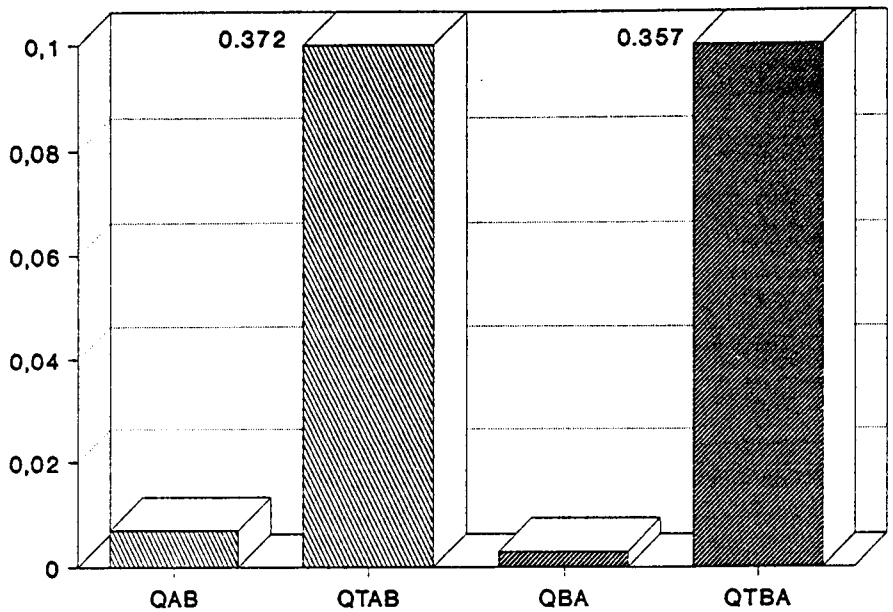
P. Elegans, Δ t=100ms, d=7.5mm



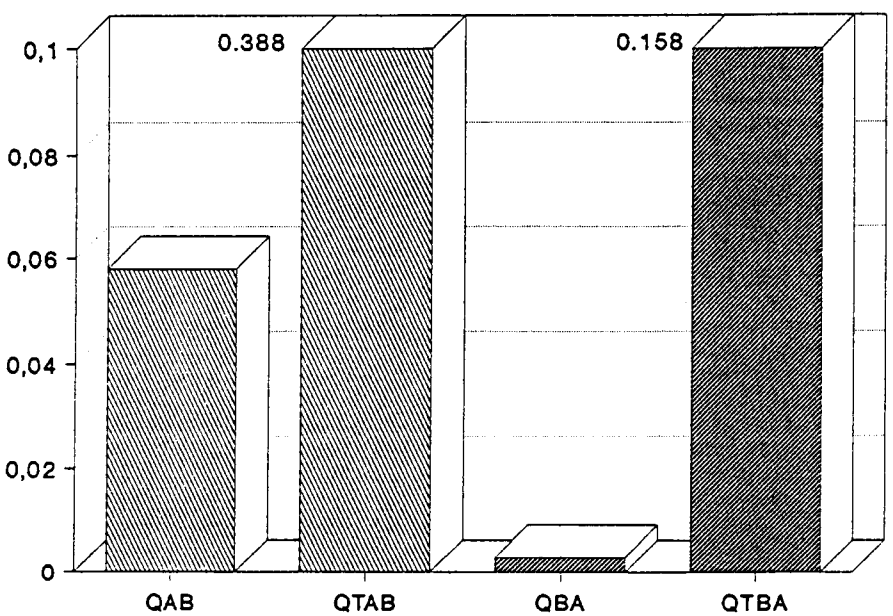
P. Elegans, Δ t=100ms, d=15mm



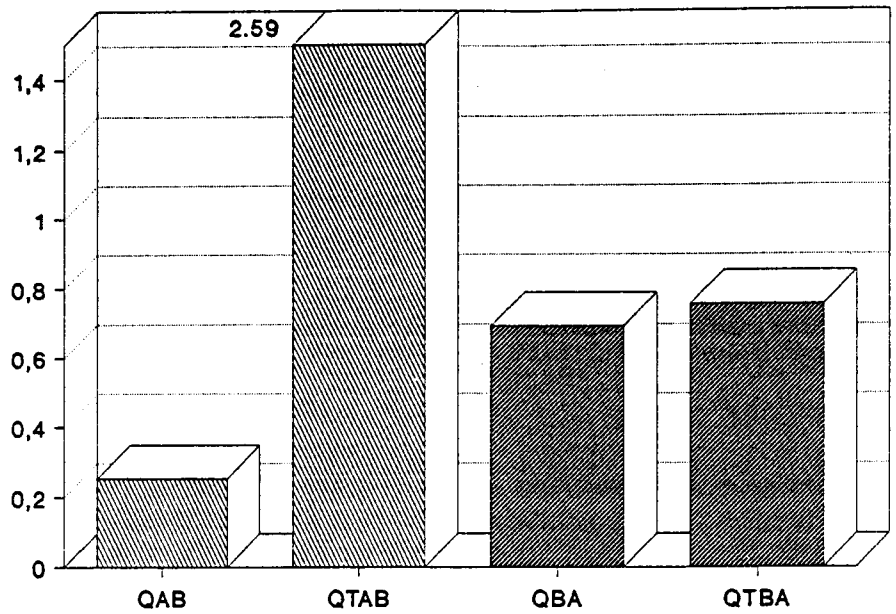
P. Elegans, Δt=1s, d=7.5mm



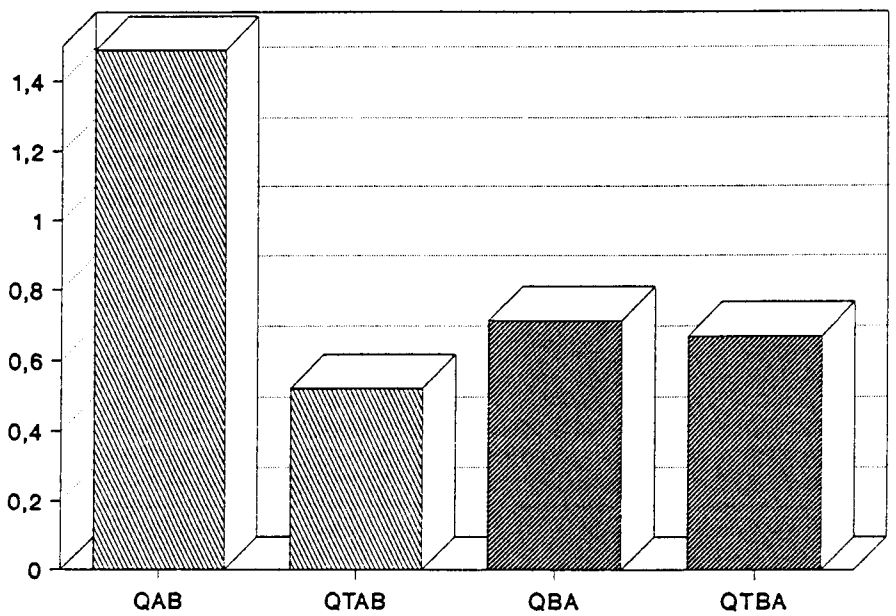
P. Elegans, Δt=1s, d=15mm



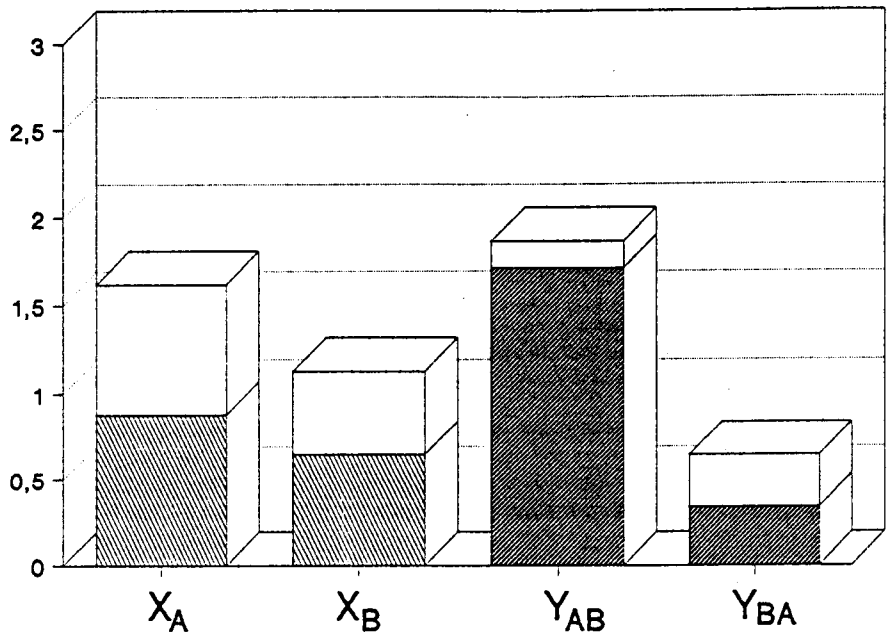
P. Elegans, Δ t=100ms, d=7.5mm



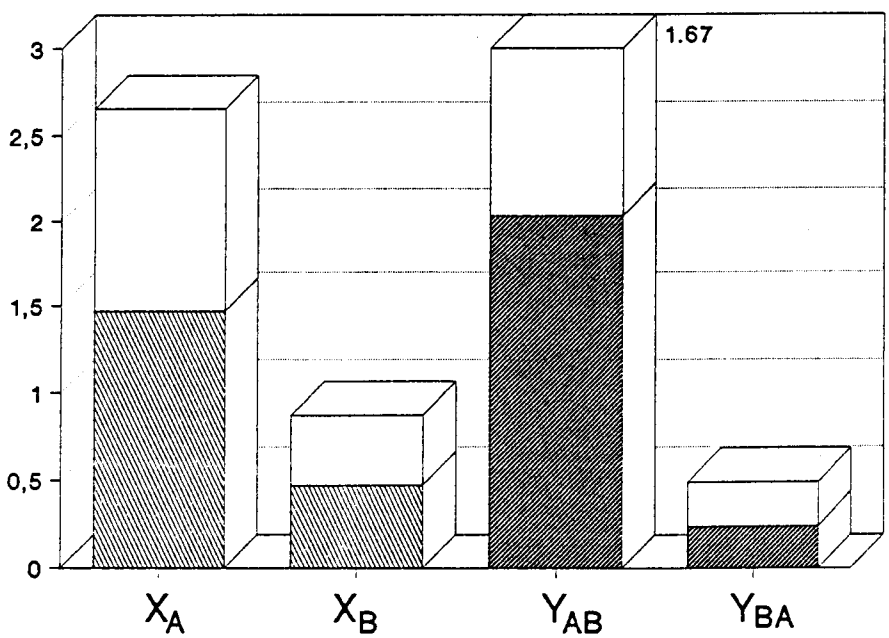
P. Elegans, Δ t=100ms, d=15mm



P. Elegans, Δt=1s, d=7.5mm



P. Elegans, Δ t=1s, d=15mm



data file: c:\css\gony\QABELE.CSS [32 cases with 7 variables]
Elegans: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=1) 1s, 7.5 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-2.124	.078	4	4	.006920	.371503
QBA¦QTBA	-2.305	.061	4	4	.003437	.357500

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.006773	.343249	2568.561	.000
QBA¦QTBA	.004389	.307178	4897.391	.000

data file: c:\css\gony\QABELE.CSS [32 cases with 7 variables]
Elegans: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB|QTAB (-9999.)	4 QBA|QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=1) 100ms, 7.5mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB|QTAB	-1.272	.251	4	4	.253723	2.592105
QBA|QTBA	-.124	.905	4	4	.692454	.755000

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB|QTAB	.328080	3.663336	124.679	.002
QBA|QTBA	.501664	.871034	3.015	.389

ata file: c:\css\gony\QABELE.CSS [32 cases with 7 variables]
egans: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

RIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

ASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=2) 1s, 15mm

D = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-1.684	.143	4	4	.058232	.387637
QBA¦QTBA	-1.486	.186	4	4	.002738	.157750

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.095525	.379337	15.8	.049
QBA¦QTBA	.000248	.208615	710092.3	.000

data file: c:\css\gony\QABELE.CSS [32 cases with 7 variables]
Elegans: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=2) 100 ms, 15 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	2.364	.056	4	4	1.488449	.520701
QBA¦QTBA	.118	.910	4	4	.713204	.667500

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.671676	.468383	2.056	.569
QBA¦QTBA	.386927	.667551	2.977	.394

ata file: c:\css\gony\XYELEG.CSS [16 cases with 9 variables]
. Elegans

ARIABLE LIST and missing data values:

3	XA (-9999.)	4	YAB (-9999.)	5	XB (-9999.)
6	YBA (-9999.)				

ASE SELECTION CONDITION:
Include if:
(v0 <= 4)

D = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
XA	4	.301000	1.860000	.877500	.370666	.741332
YAB	4	1.595000	1.938000	1.711750	.077442	.154884
XB	4	.326000	1.359000	.646500	.239452	.478905
YBA	4	.134000	.791000	.337500	.152679	.305357

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
XA	2.469371	-.714371
YAB	2.044333	1.379167
XB	1.674857	-.381857
YBA	.993197	-.318197

data file: c:\css\gony\ELEGANS.CSS [32 cases with 15 variables]
Elegans, δt: 1=1s, 0.1=100ms, M¦O: 1=o.Sicht, 2=m.Sicht, DMM:7.5mm, 15mm

	1 δT	2 M¦O	3 DMM	4 I1Q	5 SIG1	6 I2Q	7 SIG2	8 I1DI2
1	1.0	1	7.5	1231.60	19144.43	154.54	1892.56	20.53
2	1.0	2	7.5	1581.40	20261.76	375.45	3637.00	3.65
3	1.0	1	7.5	1041.64	13994.27	214.47	2047.70	41.40
4	1.0	2	7.5	663.81	5378.43	263.86	2689.68	3.14
5	1.0	1	7.5	768.46	11234.28	367.01	3323.21	31.83
6	1.0	2	7.5	853.49	6266.42	356.67	3110.99	3.12
7	1.0	1	7.5	168.57	2244.28	455.27	3983.33	6.05
8	1.0	2	7.5	1039.72	6626.35	329.31	2468.03	3.13
9	.1	1	7.5	23.91	5.53	4.91	3.48	7.08
10	.1	2	7.5	145.96	1623.78	15.01	122.76	5.66
11	.1	1	7.5	30.31	188.72	4.22	3.32	11.52
12	.1	2	7.5	214.77	2681.12	25.88	291.84	5.31
13	.1	1	7.5	154.15	1919.98	3.35	2.29	59.44
14	.1	2	7.5	27.80	69.10	6.45	10.06	4.99
15	.1	1	7.5	17.23	47.12	47.86	436.58	6.29
16	.1	2	7.5	24.22	155.50	12.71	130.35	4.32
17	1.0	1	15.0	144.72	2570.35	179.34	2446.79	6.24
18	1.0	2	15.0	1167.57	12600.53	239.08	1796.64	2.78
19	1.0	1	15.0	882.27	13687.52	292.91	3017.55	42.50
20	1.0	2	15.0	100.99	1520.31	64.42	1236.25	2.49
21	1.0	1	15.0	319.29	6938.44	189.79	2509.05	17.12
22	1.0	2	15.0	773.11	9962.79	106.71	1221.42	2.82
23	1.0	1	15.0	459.29	8079.85	208.14	2497.54	25.01
24	1.0	2	15.0	1125.31	13309.57	221.34	2157.27	5.18
25	.1	1	15.0	2.61	1.58	1.84	1.51	1.92
26	.1	2	15.0	2.80	1.66	1.92	1.58	2.07
27	.1	1	15.0	2.57	1.54	1.75	1.44	1.96
28	.1	2	15.0	18.86	185.04	16.26	168.68	2.08
29	.1	1	15.0	2.51	1.60	2.36	5.10	1.81
30	.1	2	15.0	2.60	1.81	1.93	1.58	1.89
31	.1	1	15.0	2.44	1.49	1.77	1.24	1.81
32	.1	2	15.0	61.83	646.36	51.68	606.31	4.35

ca file: c:\css\gony\ELEGANS.CSS [32 cases with 15 variables]
egans, δt: 1=1s, 0.1=100ms, M|O: 1=o.Sicht, 2=m.Sicht, DMM:7.5mm, 15mm

	9 SIGD12	10 I2DI1	11 SIGD21	12 I1MI2	13 SIG12
1	368.01	1.31	19.11	6407818.63	190700115.30
2	2.18	.33	.13	37385546.7	629312238.56
3	569.79	2.63	27.11	58102.77	595537.74
4	1.44	.36	.12	12698007.9	216884498.92
5	617.32	5.63	52.26	46871.06	397372.43
6	1.51	.37	.12	17383722.7	210857604.51
7	86.39	8.02	74.34	29252.48	224281.54
8	1.45	.37	.13	13094240.5	138954633.90
9	5.65	.22	.16	117.61	90.52
10	4.09	.27	.19	201202.62	4110472.23
11	77.44	.34	.32	109.37	629.52
12	4.23	.30	.22	787091.88	15318822.78
13	743.12	.27	.27	464.28	6155.01
14	3.97	.33	.24	735.74	5102.74
15	14.50	5.02	43.86	541.72	5108.61
16	3.35	.37	.26	20464.59	431611.80
17	111.71	4.72	71.69	9440.10	108105.27
18	1.57	.43	.17	17221608.8	234480360.34
19	717.85	5.78	60.15	33360.71	308022.49
20	7.24	.50	.17	1877965.48	59129442.92
21	383.52	5.41	72.03	12312.55	156593.28
22	2.81	.48	.21	8782165.63	180177261.98
23	415.22	6.72	88.07	14877.80	176754.45
24	83.65	.54	.25	17539262.6	262330989.55
25	1.47	1.01	1.08	4.76	4.81
26	1.65	1.00	1.17	5.32	6.20
27	1.50	.95	.96	4.50	4.79
28	1.84	.95	.96	31456.57	665547.04
29	1.45	1.42	4.09	5.57	10.11
30	1.61	1.06	1.23	4.98	5.24
31	1.42	1.00	.96	4.37	4.38
32	3.54	.45	.45	394222.75	7734984.40

data file: c:\css\gony\ELEGAN2.CSS [16 cases with 26 variables]

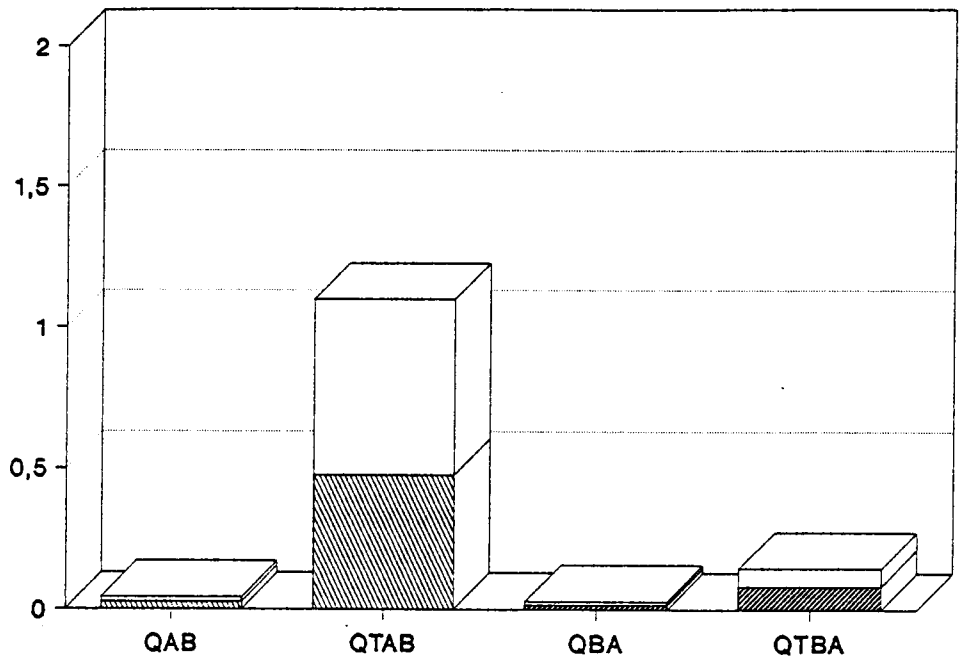
P. elegans

	1 &T	2 DMM	15 QAB	16 QBA	17 SAA	18 SBB	19 ABS_XY	20 QTAB	21 QTBA
1	1.0	7.5	.01	.01	.61	.17	1.16	.20	.70
2	1.0	7.5	.00	.00	2.46	.66	.21	.14	.51
3	1.0	7.5	.00	.00	.81	1.06	.26	.28	.21
4	1.0	7.5	.02	.00	.03	1.91	.46	.88	.01
5	.1	7.5	.72	1.19	.03	.11	73.55	7.87	1.97
6	.1	7.5	.05	.69	.02	.03	8.37	.22	.17
7	.1	7.5	.01	.89	30.75	.27	.03	.01	.80
8	.1	7.5	.23	.01	.51	14.18	.16	2.27	.08
9	1.0	15.0	.01	.00	.02	.56	.00	.00	.00
10	1.0	15.0	.01	.00	76.32	20.67	.01	.12	.46
11	1.0	15.0	.01	.00	.17	3.16	.23	.73	.04
12	1.0	15.0	.20	.00	.17	.88	.79	.70	.13
13	.1	15.0	1.12	1.08	.87	.92	.36	.33	.31
14	.1	15.0	1.23	1.00	.02	.01	37.80	.44	.70
15	.1	15.0	1.11	.30	.93	1.50	.08	.12	.07
16	.1	15.0	2.49	.47	.00	.00	1018.5	1.19	1.59

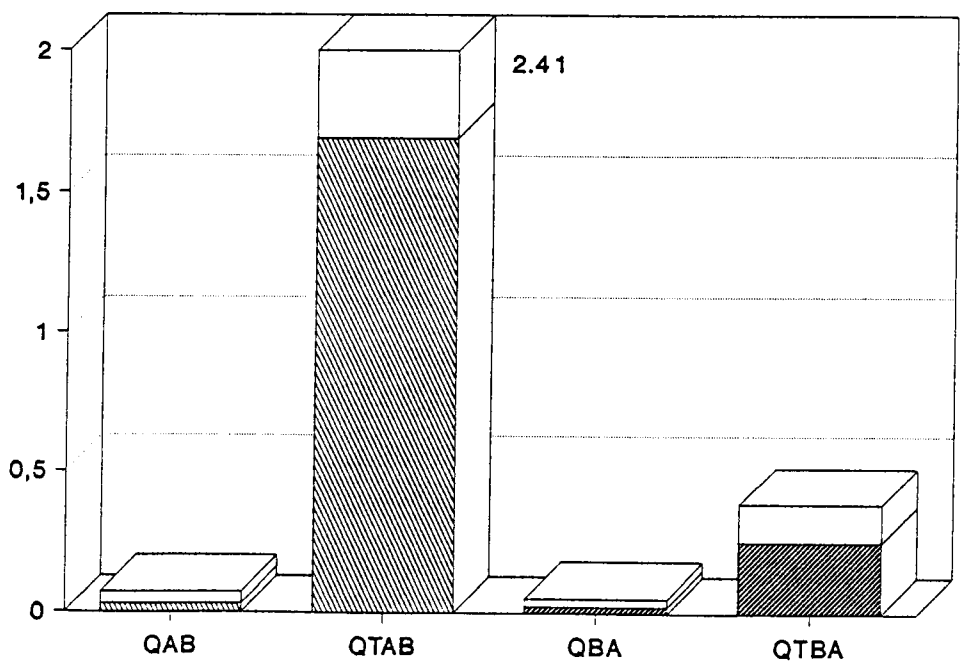
ata file: c:\css\gony\XYELEG.CSS [16 cases with 9 variables]
. Elegans

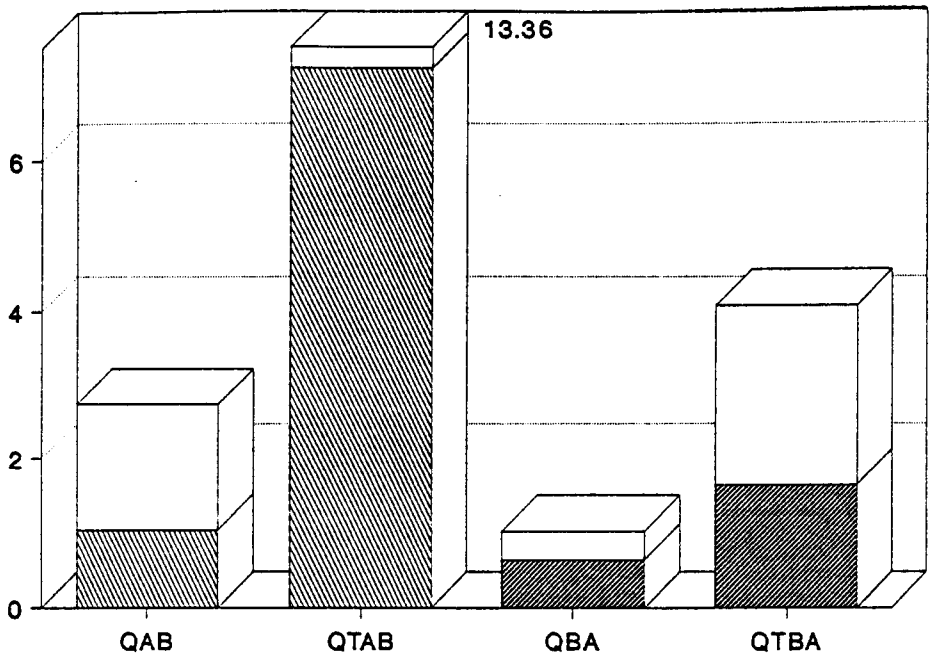
	1 δT	2 DMM	3 XA	4 YAB	5 XB	6 YBA	7 DA	8 DB
1	1.0	7.5	1.041	1.938	1.359	.134	0.00	0.00
2	1.0	7.5	.301	1.633	.326	.186	0.00	.01
3	1.0	7.5	.308	1.681	.471	.239	0.00	.01
4	1.0	7.5	1.860	1.595	.430	.791	0.00	0.00
5	.1	7.5	96.591	-440.635	-33.229	7.451	20.68	20.67
6	.1	7.5	14.179	-50.944	-4.957	1.544	1.64	1.63
7	.1	7.5	.035	6.684	1.703	.005	1.98	1.74
8	.1	7.5	2.155	-.270	-.255	1.445	.12	.14
9	1.0	15.0	2.994	4.094	.838	.613	0.00	-.01
10	1.0	15.0	.111	.010	-.050	.090	.01	.01
11	1.0	15.0	1.245	1.979	.369	.115	0.00	0.00
12	1.0	15.0	1.520	2.052	.726	.153	0.00	0.00
13	.1	15.0	1.050	.032	-.311	.955	1.37	2.74
14	.1	15.0	75.442	-100.014	-91.369	68.543	4.25	4.25
15	.1	15.0	1.106	-.075	-.132	.893	.61	1.18
16	.1	15.0	299.163	-377.473	-355.699	279.208	4.71	4.71

P. Elegans+Lunula, Δt=1s, d=7.5mm

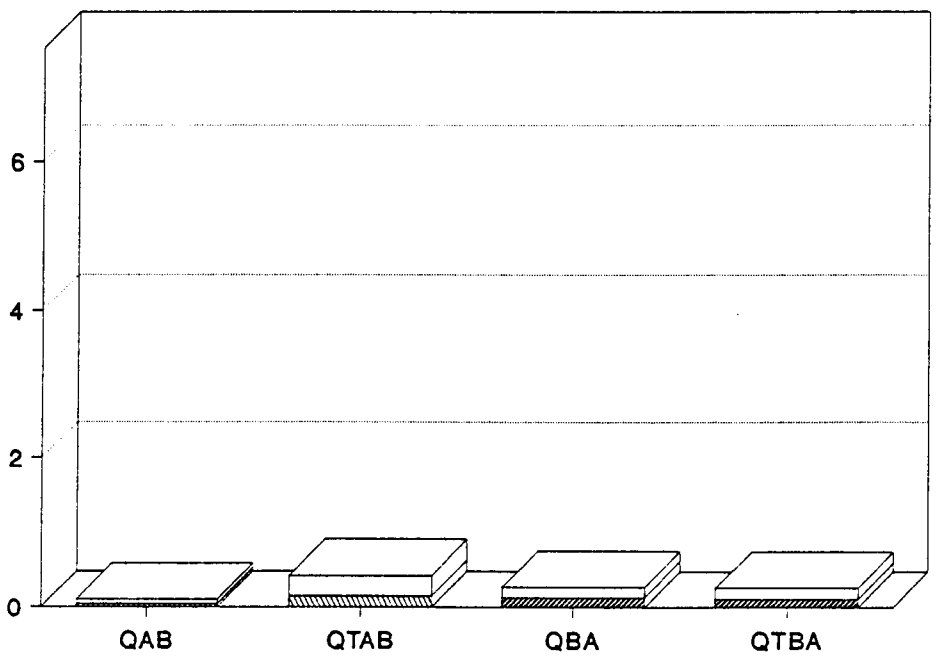


P. Elegans+Lunula, Δt=1s, d=15mm

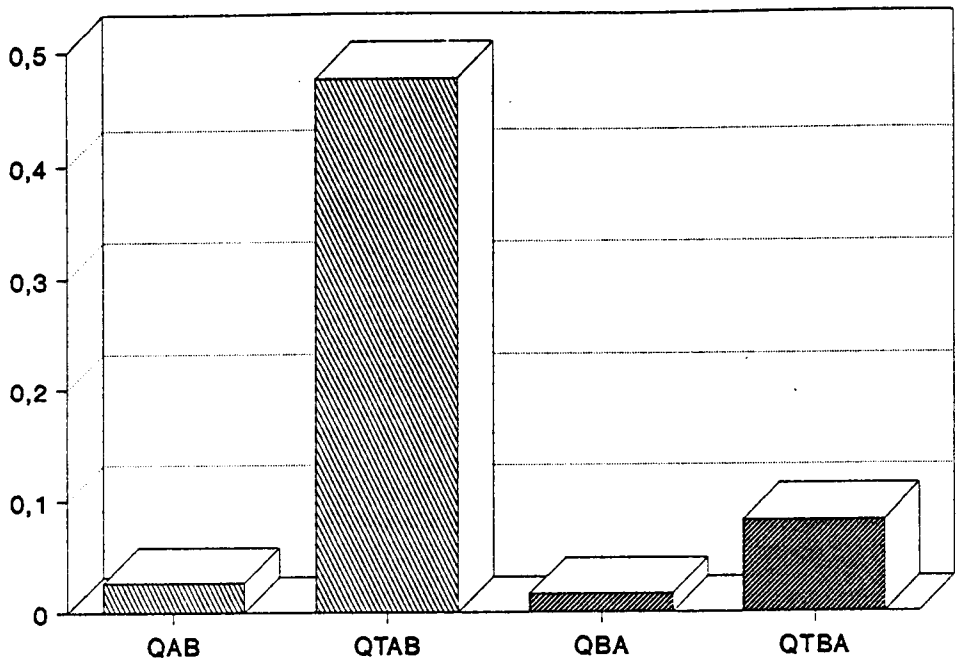




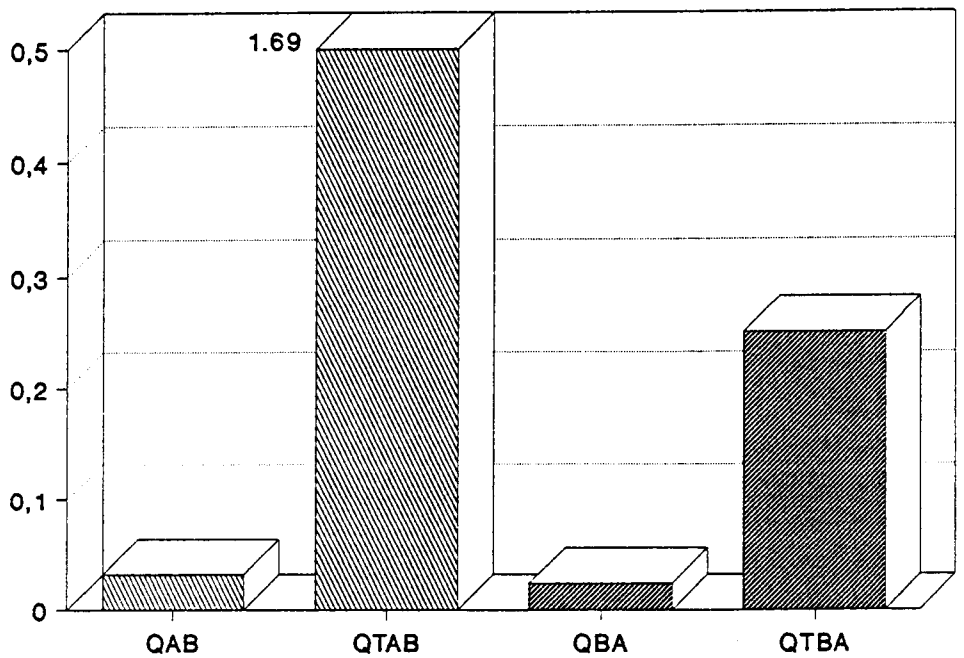
P. Elegans+Lunula, Δ t=100ms, d=15mm



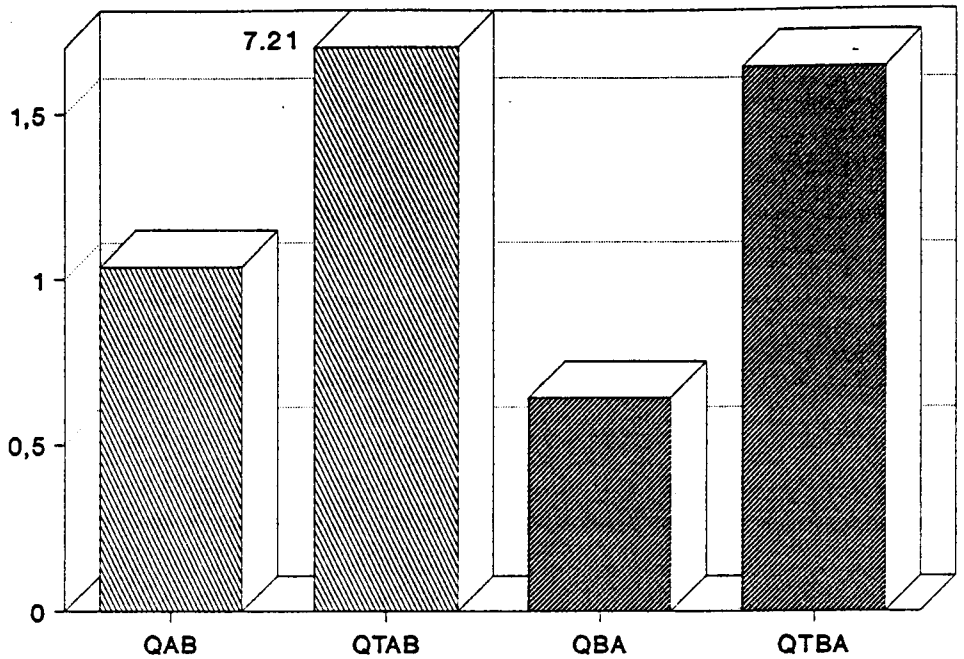
P. Elegans+Lunula, Δt=1s, d=7.5mm



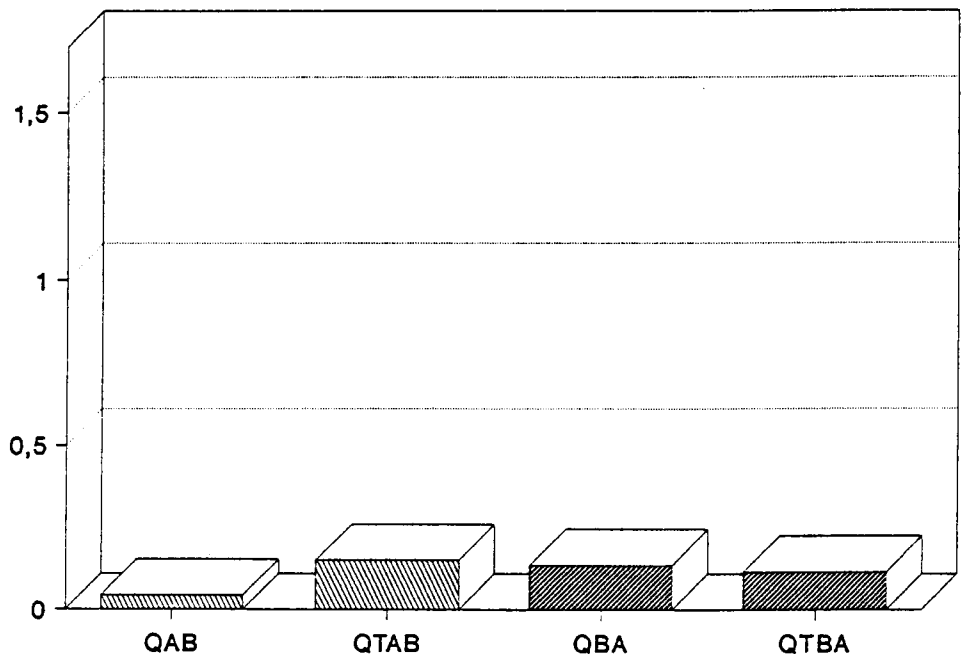
P. Elegans+Lunula, Δt=1s, d=15mm



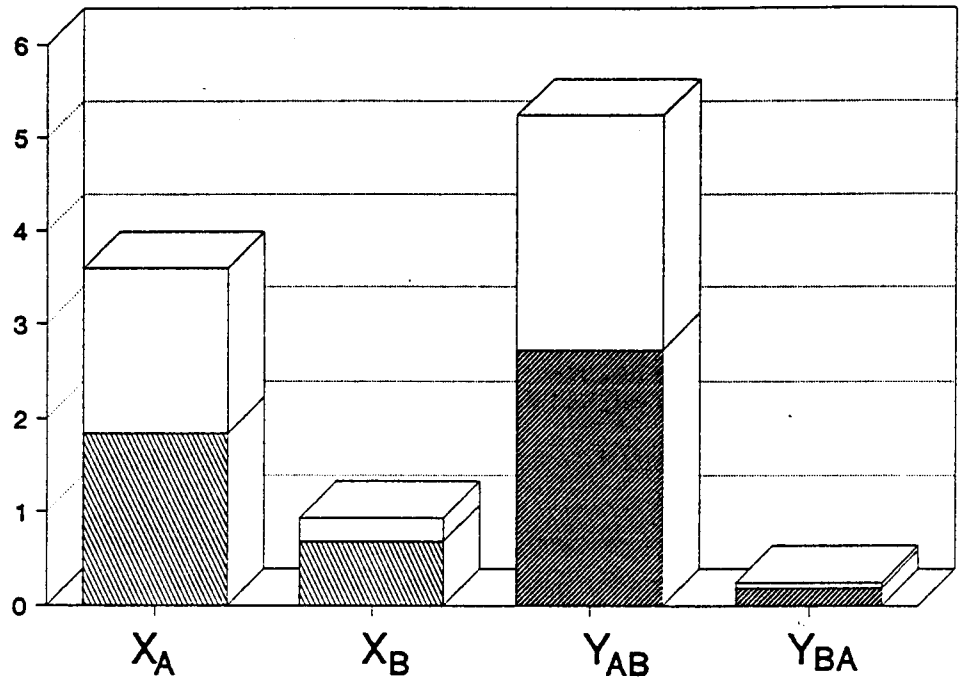
P. Elegans+Lunula, Δ t=100ms, d=7.5mm



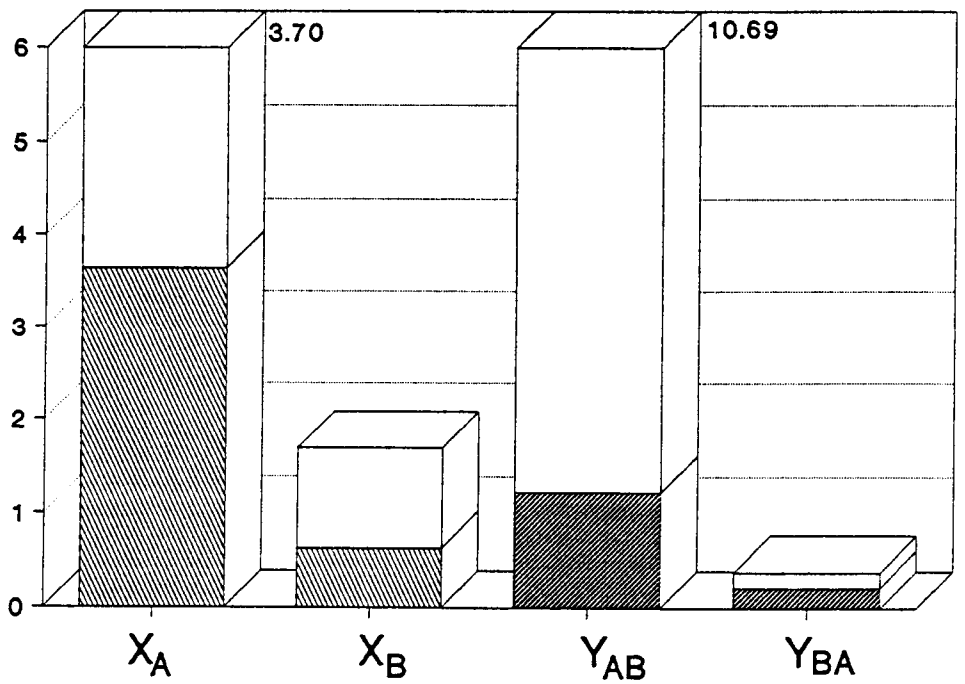
P. Elegans+Lunula, Δ t=100ms, d=15mm



P. Elegans+Lunula, Δt=1s, d=7.5mm



P. Elegans+Lunula, Δt=1s, d=15mm



data file: c:\css\gony\QABELLU.CSS [32 cases with 7 variables]
Elegans+Lunula: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=1) 1s, 7.5mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-1.444	.199	4	4	.027230	.475793
QBA¦QTBA	-2.132	.077	4	4	.017130	.083181

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.014902	.621018	1736.724	.000
QBA¦QTBA	.011626	.060864	27.405	.022

data file: c:\css\gony\QABELLU.CSS [32 cases with 7 variables]
Elegans+Lunula: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=1) 100 ms, 7.5 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-.917	.395	4	4	1.035658	7.210729
QBA¦QTBA	-.808	.450	4	4	.637231	1.640094

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	1.712374	13.36392	60.907	.007
QBA¦QTBA	.381247	2.45349	41.415	.012

data file: c:\css\gony\QABELLU.CSS [32 cases with 7 variables]
Elegans+Lunula: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=2) 1s, 15mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-1.373	.219	4	4	.032333	1.686994
QBA¦QTBA	-3.263	.017	4	4	.023901	.250740

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.039664	2.410455	3693.128	.000
QBA¦QTBA	.028838	.135141	21.960	.030

data file: c:\css\gony\QABELLU.CSS [32 cases with 7 variables]
Elegans+Lunula: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=2) 100 ms, 15 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-.752	.480	4	4	.044430	.150036
QBA¦QTBA	.201	.848	4	4	.136472	.116120

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.060817	.274201	20.328	.034
QBA¦QTBA	.137706	.149128	1.173	.899

data file: c:\css\gony\XYELLU.CSS [16 cases with 9 variables]
P. Elegans+Lunula

VARIABLE LIST and missing data values:

3	XA (-9999.)	4	YAB (-9999.)	5	XB (-9999.)
6	YBA (-9999.)				

CASE SELECTION CONDITION:
Include if:
(v0 > 8) and (v0 <=12) As, 15 min

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
XA	4	.63700	8.46000	3.640000	1.851751	3.70350
YAB	4	-8.55400	16.28900	1.223750	5.344258	10.68852
XB	4	-.22600	2.17800	.633500	.529135	1.05827
YBA	4	.06100	.38500	.217500	.081405	.16281

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
XA	11.59257	-4.3126
YAB	24.17531	-21.7278
XB	2.90593	-1.6389
YBA	.56710	-.1321

ata file: c:\css\gony\XYELLU.CSS [16 cases with 9 variables]
. Elegans+Lunula

ARIABLE LIST and missing data values:

3	XA (-9999.)	4	YAB (-9999.)	5	XB (-9999.)
6	YBA (-9999.)				

ASE SELECTION CONDITION:
Include if:
(v0 <= 4) 1s, 75 mm

D = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
XA	4	.886000	4.467000	1.843000	.875488	1.750976
YAB	4	-.278000	5.315000	2.723750	1.257293	2.514586
XB	4	-.008000	1.073000	.678250	.252807	.505613
YBA	4	.128000	.236000	.190500	.026509	.053019

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
XA	5.602888	-1.91689
YAB	8.123347	-2.67585
XB	1.763959	-.40746
YBA	.304348	.07665

data file: c:\css\gony\ELEGLUN.CSS [32 cases with 15 variables]
Eleg.+Lunula, &t: 1=1s. 0.1=100ms, M¦O: 1=o.Sicht, 2=m.Sicht, DMM:7.5mm, 15mm

	1 &T	2 M¦O	3 DMM	4 I1Q	5 SIG1	6 I2Q	7 SIG2	8 I1DI2
1	1.0	1	7.5	1028.51	5253.89	248.14	1303.98	15.44
2	1.0	2	7.5	2137.76	5670.01	392.75	1469.82	7.37
3	1.0	1	7.5	869.91	5285.91	387.40	2526.87	15.25
4	1.0	2	7.5	718.60	5069.94	108.53	678.79	4.72
5	1.0	1	7.5	1085.40	10363.09	91.16	481.14	36.90
6	1.0	2	7.5	1445.76	9527.25	277.43	1790.85	4.38
7	1.0	1	7.5	340.62	3420.39	110.36	918.80	12.54
8	1.0	2	7.5	1706.06	15355.63	194.52	1073.24	4.25
9	.1	1	7.5	92.16	18.52	22.03	5.38	4.45
10	.1	2	7.5	688.54	3156.02	36.83	97.92	7.26
11	.1	1	7.5	138.35	476.73	21.72	52.42	10.11
12	.1	2	7.5	135.27	150.15	19.55	12.70	6.93
13	.1	1	7.5	214.10	230.14	13.18	12.21	20.99
14	.1	2	7.5	287.33	121.29	41.98	28.53	7.56
15	.1	1	7.5	115.36	42.83	11.12	8.21	13.40
16	.1	2	7.5	116.44	167.72	20.12	76.57	6.81
17	1.0	1	15.0	192.14	1382.25	135.16	1286.27	6.52
18	1.0	2	15.0	1195.72	12387.56	116.25	660.76	3.83
19	1.0	1	15.0	731.65	6589.81	150.89	1788.62	38.70
20	1.0	2	15.0	657.04	5490.83	110.70	716.63	3.79
21	1.0	1	15.0	436.78	2644.02	98.04	606.42	29.06
22	1.0	2	15.0	1185.96	13308.67	121.30	878.89	3.76
23	1.0	1	15.0	1626.28	11443.89	31.67	106.69	95.67
24	1.0	2	15.0	1551.13	7489.47	168.39	737.10	5.95
25	.1	1	15.0	366.98	3599.53	30.14	249.25	281.45
26	.1	2	15.0	75.95	226.49	8.86	22.24	6.41
27	.1	1	15.0	19.76	84.37	3.14	9.29	13.74
28	.1	2	15.0	316.11	1355.11	19.31	66.11	11.09
29	.1	1	15.0	67.78	256.54	2.99	6.01	51.45
30	.1	2	15.0	375.45	1356.36	28.92	107.34	11.03
31	.1	1	15.0	160.60	999.32	5.92	26.91	117.55
32	.1	2	15.0	39.29	146.54	5.49	15.82	4.30

data file: c:\css\gony\ELEGLUN.CSS [32 cases with 15 variables]
Eleg.+Lunula, δt: 1=1s. 0.1=100ms, M¦O: 1=o.Sicht, 2=m.Sicht, DMM:7.5mm, 15mm

	9 SIGD12	10 I2DI1	11 SIGD21	12 I1MI2	13 SIG12
1	94.24	.47	2.57	176968.84	795841.89
2	4.13	.17	.08	6730498.17	49549794.05
3	94.26	1.73	12.71	2031672.35	50730618.56
4	2.96	.26	.10	1902894.89	27147452.20
5	431.91	.88	5.39	74660.48	636991.99
6	3.44	.29	.12	10007015.2	106628802.20
7	132.93	1.71	16.53	28784.91	431871.05
8	3.42	.31	.12	14015061.6	221782639.21
9	1.59	.24	.07	2027.67	601.41
10	5.72	.18	.07	333186.77	2239086.29
11	43.75	.28	.67	2541.64	7455.96
12	3.46	.17	.07	3687.09	7976.35
13	29.27	.09	.06	3073.10	5741.96
14	3.22	.14	.04	14199.81	24391.67
15	8.51	.11	.09	1287.72	1083.74
16	3.03	.17	.07	12439.97	222939.58
17	47.02	2.77	28.01	11083.81	77348.98
18	4.29	.40	.20	5104376.15	76390106.22
19	324.26	3.07	31.39	22004.15	191877.23
20	3.36	.37	.19	2555437.10	43495346.32
21	201.52	1.95	14.61	59184.84	750100.07
22	4.11	.43	.23	10402958.1	248387915.64
23	719.65	.72	3.30	33777.85	244253.67
24	5.28	.30	.22	4411587.77	46982555.39
25	3224.81	4.30	30.14	825.66	5457.50
26	7.06	.45	.59	4436.39	26318.86
27	63.39	1.19	4.49	41.53	191.82
28	8.43	.20	.32	94437.46	1541575.34
29	228.79	1.08	3.04	120.38	410.10
30	8.09	.20	.37	155097.77	1628910.58
31	736.40	.59	2.61	1086.60	8419.08
32	5.29	.63	.87	2396.48	18196.64

data file: c:\css\gony\ELEGLUN2.CSS [16 cases with 25 variables]
P. Elegans + Lunula

	1 &T	2 DMM	15 QAB	16 QBA	17 SAA	18 SBB	19 ABS_XY	20 QTAB	21 QTBA
1	1.0	7.5	.04	.03	.23	.40	.34	.14	.08
2	1.0	7.5	.03	.01	1.47	12.74	.03	.38	.04
3	1.0	7.5	.01	.02	.56	.11	.07	.01	.04
4	1.0	7.5	.03	.01	.04	.32	4.28	1.38	.17
5	.1	7.5	3.60	1.00	.02	.36	76.09	27.22	1.36
6	.1	7.5	.08	.10	1.05	1.23	.00	.00	.00
7	.1	7.5	.11	.67	.56	.10	.01	.00	.00
8	.1	7.5	.36	.78	.98	.31	5.29	1.62	5.19
9	1.0	15.0	.09	.01	.03	1.35	3.87	5.23	.10
10	1.0	15.0	.01	.01	1.24	1.86	.19	.35	.24
11	1.0	15.0	.02	.02	.14	.65	1.76	1.15	.24
12	1.0	15.0	.01	.07	1.10	.04	.39	.01	.43
13	.1	15.0	.00	.02	23.35	11.57	.00	.00	.00
14	.1	15.0	.13	.07	.00	.03	21.22	.56	.08
15	.1	15.0	.04	.12	.03	.01	1.41	.02	.05
16	.1	15.0	.01	.33	16.71	1.16	.02	.02	.33

data file: c:\css\gony\XYELLU.CSS [16 cases with 9 variables]
P. Elegans+Lunula

	1 &T	2 DMM	3 XA	4 YAB	5 XB	6 YBA	7 DA	8 DB
1	1.0	7.5	1.069	4.186	.603	.236	-.07	0.00
2	1.0	7.5	.950	-.278	-.008	.128	.03	.03
3	1.0	7.5	.886	5.315	1.073	.165	.02	.02
4	1.0	7.5	4.467	1.672	1.045	.233	.01	-.01
5	.1	7.5	112.673	-440.099	-13.355	3.592	41.48	41.39
6	.1	7.5	.322	4.178	.604	.047	-.56	-2.11
7	.1	7.5	.572	12.509	1.828	.084	-3.58	-.13
8	.1	7.5	2.518	-15.647	-7.935	.939	8.61	9.02
9	1.0	15.0	8.460	-3.179	.313	.385	.02	0.00
10	1.0	15.0	.828	.339	.269	.096	.01	0.00
11	1.0	15.0	4.635	-8.554	-.226	.328	.05	.03
12	1.0	15.0	.637	16.289	2.178	.061	.07	.06
13	.1	15.0	.086	1.473	.172	.010	-.09	-.13
14	.1	15.0	16.061	-.403	1.302	.770	.11	.08
15	.1	15.0	5.285	5.754	.188	.418	.24	.24
16	.1	15.0	.106	3.757	.605	.012	0.00	-.05

data file: c:\css\gony\ELEGLUN2.CSS [16 cases with 25 variables]
>. Elegans + Lunula

VARIABLE LIST and missing data values:

15	QAB (-9999.)	16	QBA (-9999.)	20	QTAB (-9999.)
21	QTBA (-9999.)				

CASE SELECTION CONDITION:
Include if:
(v0 <= 4)

ls, 7.5 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
QAB	4	.007965	.043824	.027230	.007451	.014902
QBA	4	.007260	.031128	.017130	.005813	.011626
QTAB	4	.007558	1.377649	.475793	.310509	.621018
QTBA	4	.039453	.170606	.083181	.030432	.060864

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
QAB	.059229	-.004769
QBA	.042095	-.007836
QTAB	1.809311	-.857726
QTBA	.213875	-.047513

data file: c:\css\gony\ELEGLUN2.CSS [16 cases with 25 variables]
P. Elegans + Lunula

VARIABLE LIST and missing data values:

15 QAB (-9999.) 21 QTBA (-9999.)	16 QBA (-9999.)	20 QTAB (-9999.)

CASE SELECTION CONDITION:
Include if:
(v0 > 4) and (v0 <= 8) 100ms, 7.5mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
QAB	4	.079086	3.59748	1.035658	.856187	1.71237
QBA	4	.104478	1.00000	.637231	.190623	.38125
QTAB	4	.000493	27.22408	7.210729	6.681959	13.36392
QTBA	4	.002092	5.19232	1.640094	1.226746	2.45349

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
QAB	4.71266	-2.6413
QBA	1.45589	-.1814
QTAB	35.90721	-21.4857
QTBA	6.90850	-3.6283

data file: c:\css\gony\ELEGLUN2.CSS [16 cases with 25 variables]

P. Elegans + Lunula

VARIABLE LIST and missing data values:

15	QAB	(-9999.)	16	QBA	(-9999.)	20	QTAB	(-9999.)
21	QTBA	(-9999.)						

CASE SELECTION CONDITION:
Include if:
(v0 > 8) and (v0 <= 12) 1s, 15mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
QAB	4	.007337	.091238	.032333	.019832	.039664
QBA	4	.006053	.066667	.023901	.014419	.028838
QTAB	4	.013795	5.231442	1.686994	1.205228	2.410455
QTBA	4	.099928	.428705	.250740	.067571	.135141

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
QAB	.117505	-.05284
QBA	.085825	-.03802
QTAB	6.862989	-3.48900
QTBA	.540930	-.03945

ata file: c:\css\gony\ELEGLUN2.CSS [16 cases with 25 variables]
. Elegans + Lunula

ARIABLE LIST and missing data values:

15	QAB (-9999.)	16	QBA (-9999.)	20	QTAB (-9999.)
21	QTBA (-9999.)				

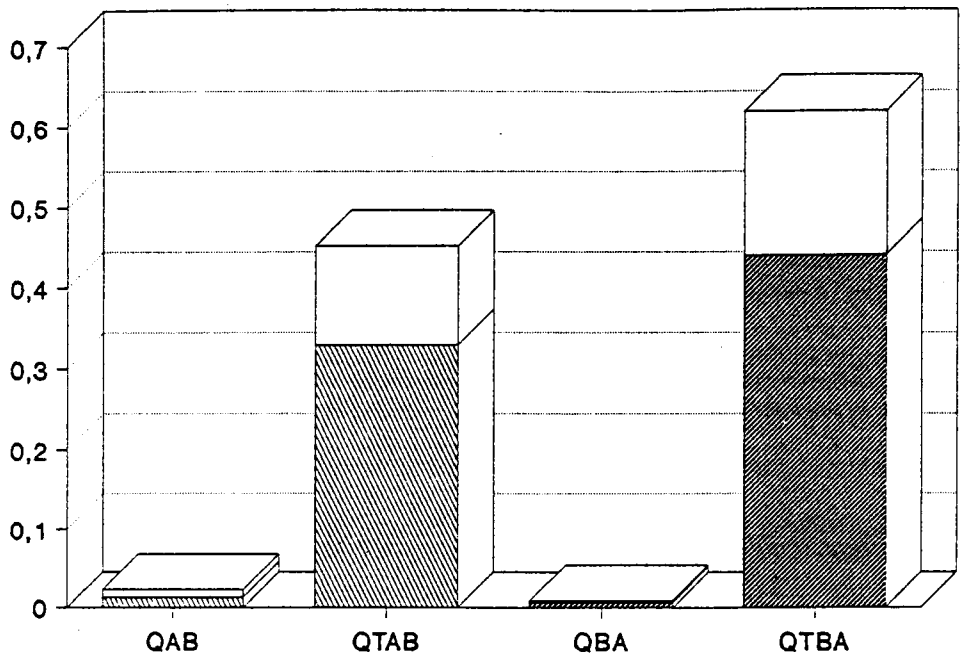
ASE SELECTION CONDITION:
Include if:
(v0 > 12) and (v0 <= 16) 100 ms, 15 mm

D = SQRT (SUM (d**2)/(n-1))

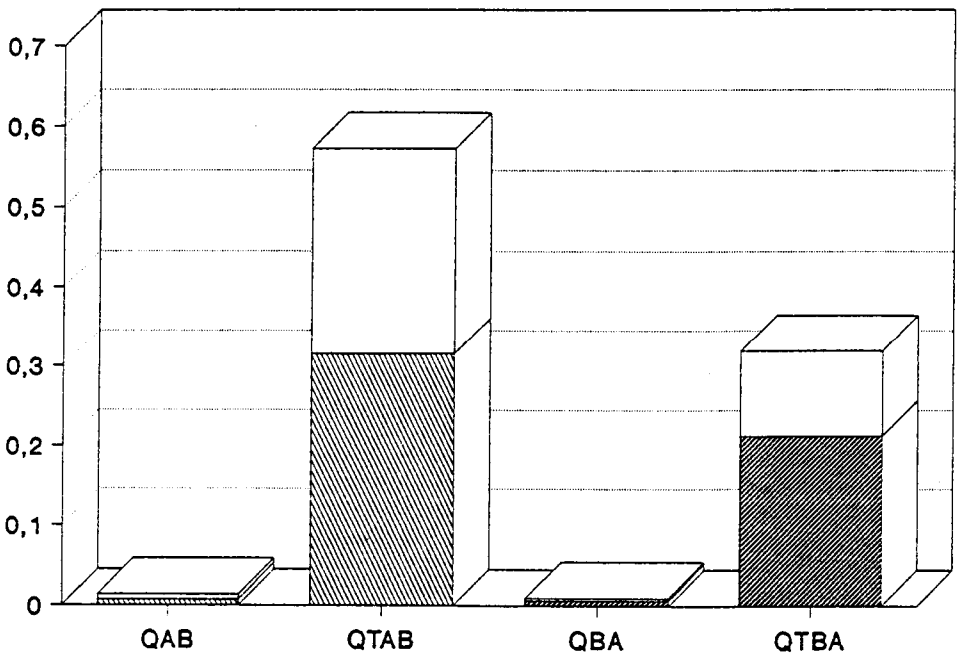
css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
QAB	4	.002189	.132986	.044430	.030408	.060817
QBA	4	.019575	.333333	.136472	.068853	.137706
QTAB	4	.000717	.561100	.150036	.137100	.274201
QTBA	4	.001448	.334162	.116120	.074564	.149128

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
QAB	.175022	-.086163
QBA	.432169	-.159224
QTAB	.738830	-.438758
QTBA	.436345	-.204105

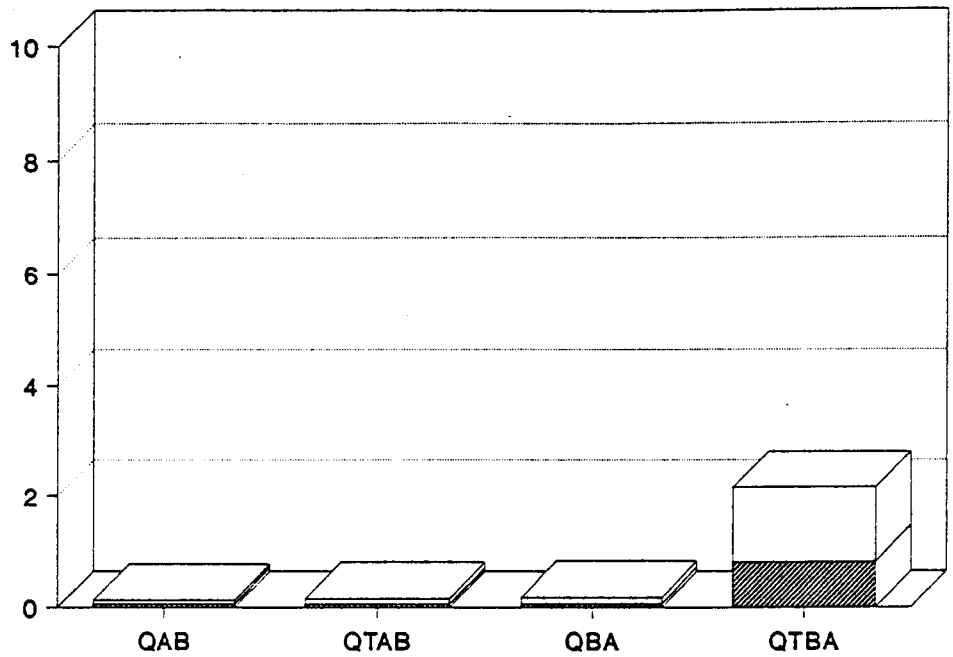
Gonyaulax+P. Elegans, Δt=1s, d=7.5mm



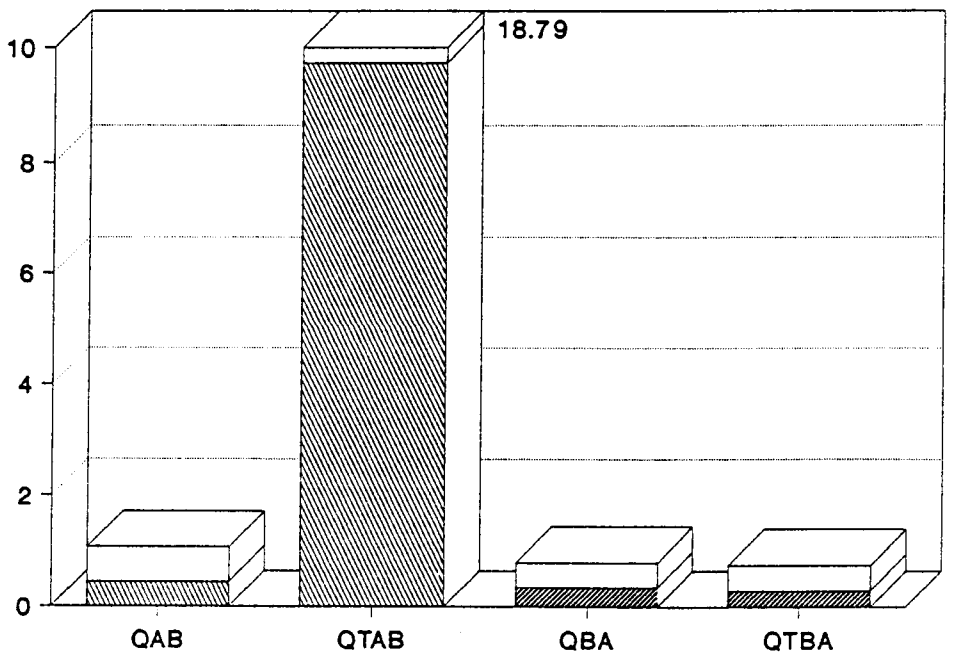
Gonyaulax+P. Elegans, Δ t=1s, d=15mm



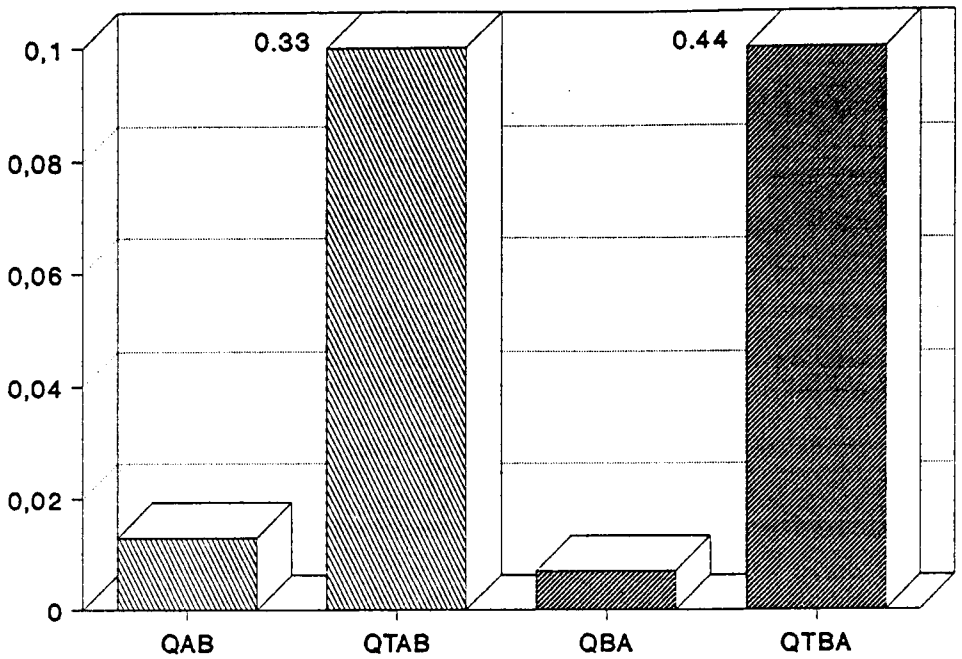
Gonyaulax+P. Elegans, Δ t=100ms, d=7.5mm



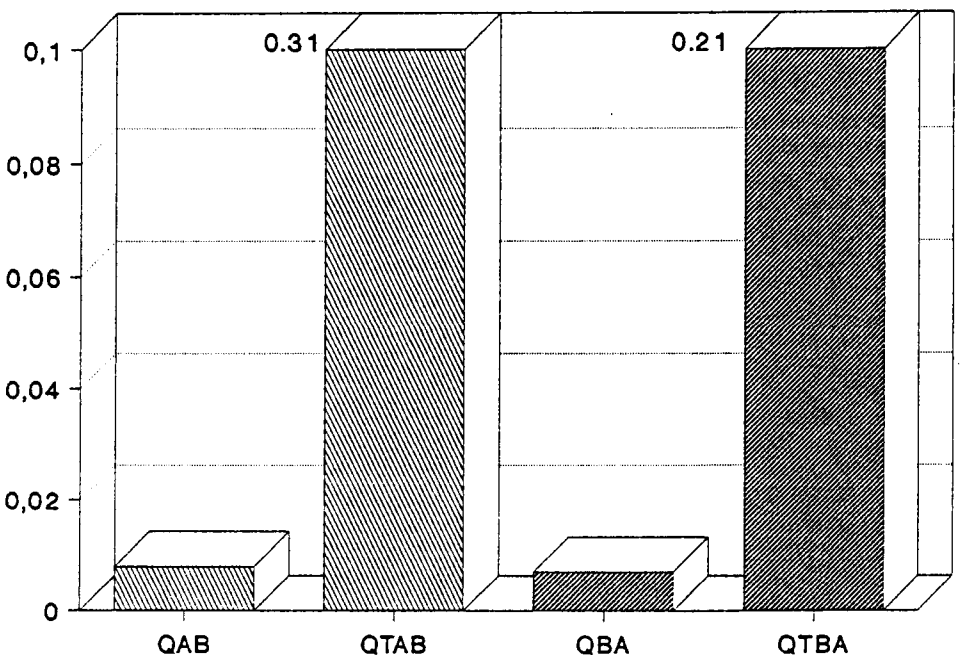
Gonyaulax+P. Elegans, Δ t=100ms, d=15mm



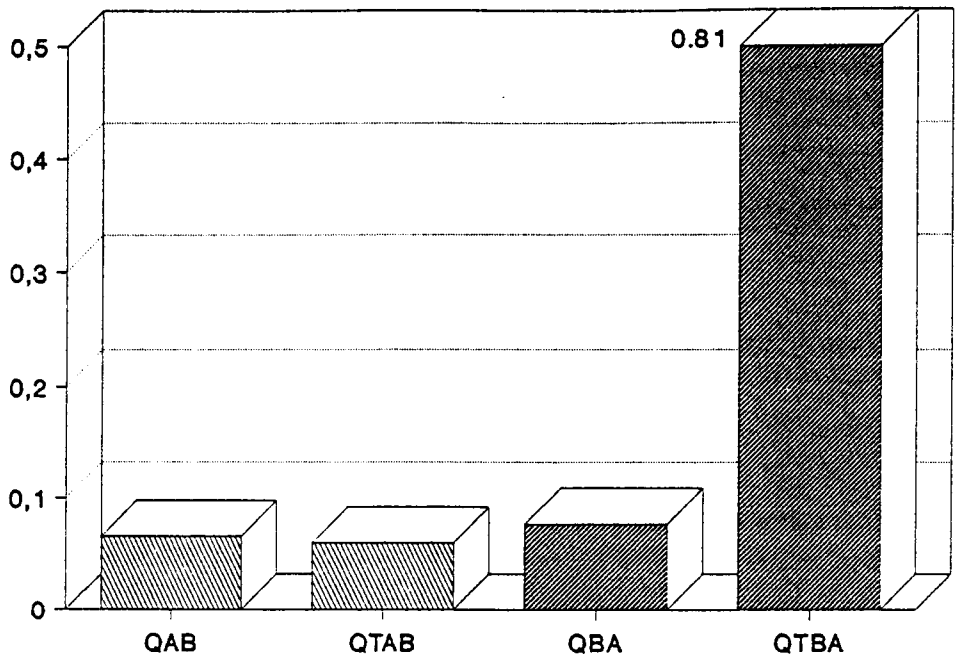
Gonyaulax+P. Elegans, Δt=1s, d=7.5mm



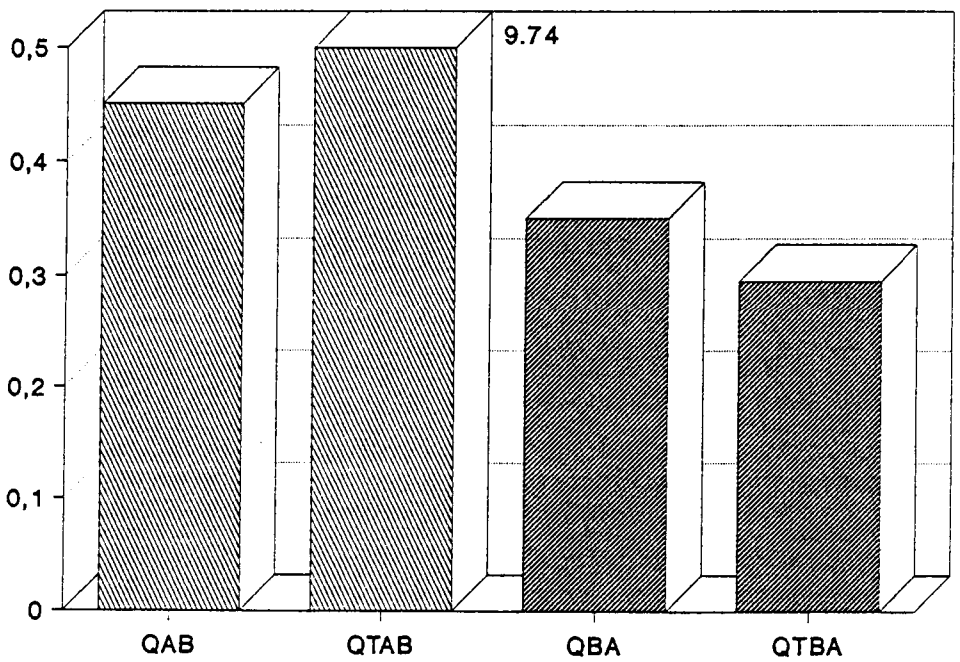
Gonyaulax+P. Elegans, Δ t=1s, d=15mm



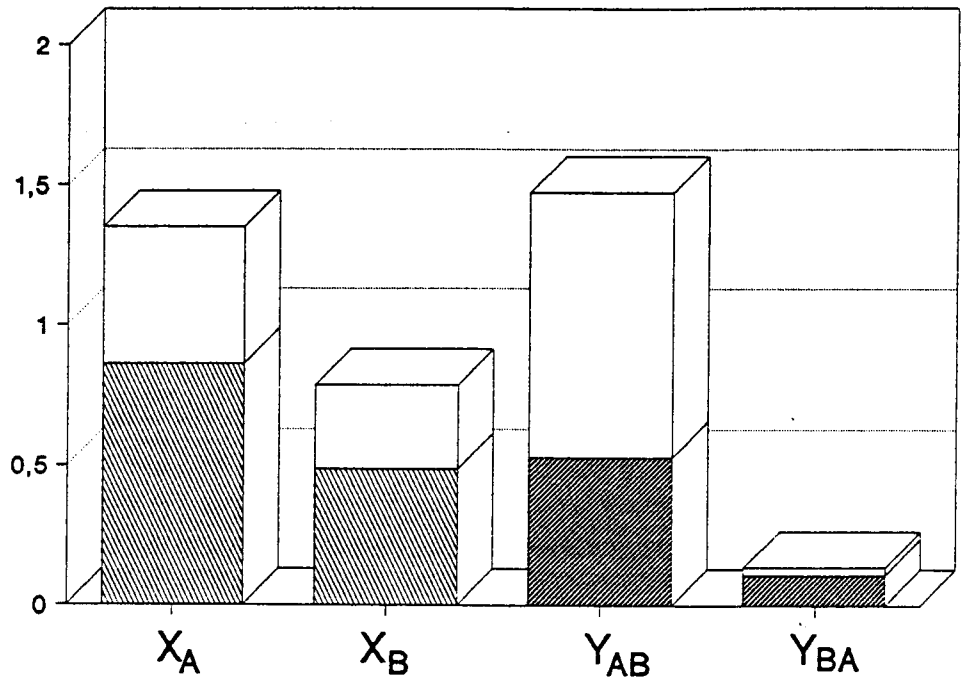
Gonyaulax+P. Elegans, Δ t=100ms, d=7.5mm



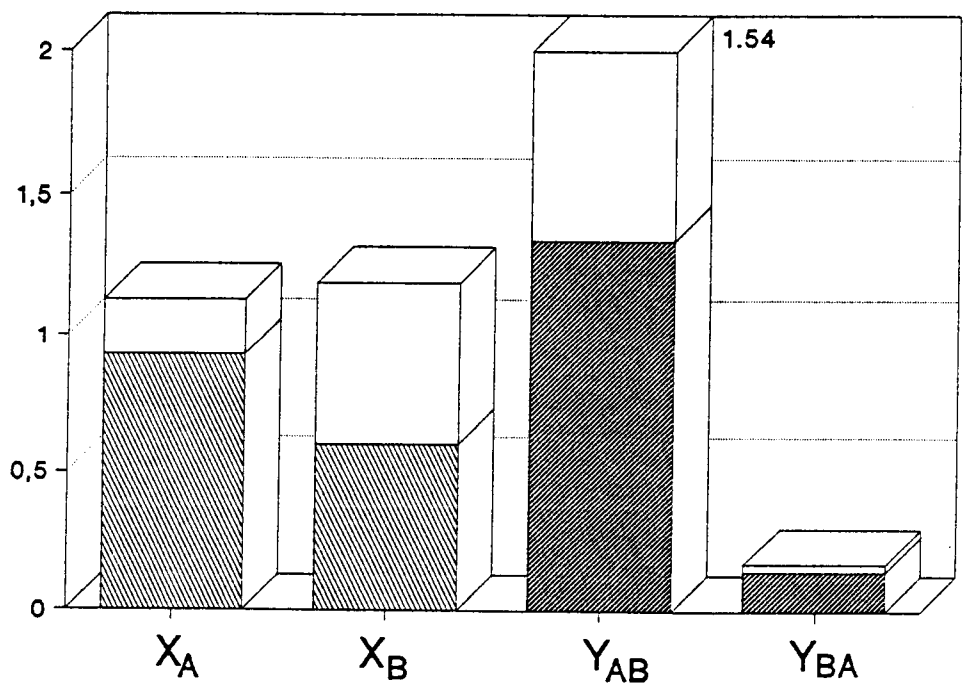
Gonyaulax+P. Elegans, Δ t=100ms, d=15mm



Gonyaulax+P. Elegans, Δt=1s, d=7.5mm



Gonyaulax+P. Elegans, Δt=1s, d=15mm



data file: c:\css\gony\QABGOEL.CSS [32 cases with 7 variables]
Gonyaulax+Elegans: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=1) 1s, 7.5 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-5.120	.002	4	4	.012722	.328719
QBA¦QTBA	-4.831	.003	4	4	.007452	.441172

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.010083	.123030	148.880	.002
QBA¦QTBA	.001833	.179557	9600.253	.000

data file: c:\css\gony\QABGOEL.CSS [32 cases with 7 variables]
Gonyaulax+Elegans: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=1) 100 ms, 7.5 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	.109	.916	4	4	.066401	.059910
QBA¦QTBA	-1.086	.319	4	4	.076886	.806729

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.061718	.101376	2.698	.437
QBA¦QTBA	.106553	1.339375	158.006	.002

data file: c:\css\gony\QABGOEL.CSS [32 cases with 7 variables]
Gonyaulax+Elegans: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=2) 1s, 15mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-2.389	.054	4	4	.007857	.314834
QBA¦QTBA	-3.841	.009	4	4	.007467	.212306

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.006221	.256874	1704.852	.000
QBA¦QTBA	.003422	.106617	970.925	.000

data file: c:\css\gony\QABGOEL.CSS [32 cases with 7 variables]
Gonyaulax+Elegans: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=2) 100ms, 15mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-.988	.361	4	4	.451085	9.737140
QBA¦QTBA	.170	.870	4	4	.349794	.295322

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.619836	18.79248	919.210	.000
QBA¦QTBA	.448134	.45621	1.036	.977

Data file: c:\css\gony\XYGOEL.CSS [16 cases with 9 variables]
Gonyaulax+P. Elegans

VARIABLE LIST and missing data values:

3 XA (-9999.) 6 YBA (-9999.)	4 YAB (-9999.)	5 XB (-9999.)

CASE SELECTION CONDITION:
Include if:
(v0 <= 4) d_i 7.5 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
XA	4	.527000	1.582000	.860000	.244923	.489846
YAB	4	-.681000	1.399000	.529500	.471874	.943748
XB	4	.217000	.841000	.485750	.149865	.299730
YBA	4	.076000	.135000	.109000	.013571	.027142

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
XA	1.911850	-.19185
YAB	2.556019	-1.49702
XB	1.129364	-.15786
YBA	.167281	.05072

data file: c:\css\gony\XYGOEL.CSS [16 cases with 9 variables]
Gonyaulax+P. Elegans

VARIABLE LIST and missing data values:

3 XA (-9999.) 6 YBA (-9999.)	4 YAB (-9999.)	5 XB (-9999.)

CASE SELECTION CONDITION:
Include if:
(v0 > 8) and (v0 <=12) 15 min

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
XA	4	.702000	1.167000	.927500	.099630	.199259
YAB	4	.316000	3.625000	1.338500	.768088	1.536177
XB	4	.124000	1.451000	.601500	.292028	.584055
YBA	4	.117000	.176000	.142000	.014669	.029337

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
XA	1.355372	.49963
YAB	4.637148	-1.96015
XB	1.855647	-.65265
YBA	.204996	.07900

data file: c:\css\gony\GONELEG.CSS [32 cases with 15 variables]
Gony+Eleg, &t: 1=1s. 0.1=100ms, M¦O: 1=o.Sicht, 2=m.Sicht, DMM:7.5mm, 15mm

	1 &T	2 M¦O	3 DMM	4 I1Q	5 SIG1	6 I2Q	7 SIG2	8 I1DI2
1	1.0	1	7.5	2042.48	17078.82	372.16	2506.41	13.05
2	1.0	2	7.5	1721.24	10632.94	432.96	2293.16	3.38
3	1.0	1	7.5	2163.72	16573.59	365.31	2650.30	43.18
4	1.0	2	7.5	3840.28	26390.97	583.08	2813.61	4.86
5	1.0	1	7.5	3085.33	22282.50	663.24	4035.87	67.34
6	1.0	2	7.5	1794.84	11777.71	407.15	1995.09	4.73
7	1.0	1	7.5	1591.34	15032.13	349.03	2177.76	35.51
8	1.0	2	7.5	945.31	11272.87	291.10	2088.90	3.66
9	.1	1	7.5	187.10	803.10	33.25	91.18	10.18
10	.1	2	7.5	80.28	221.12	20.47	22.23	3.37
11	.1	1	7.5	477.59	3121.80	27.51	55.46	20.19
12	.1	2	7.5	210.03	879.52	127.73	745.60	2.95
13	.1	1	7.5	90.10	537.95	74.42	616.32	4.79
14	.1	2	7.5	78.76	204.20	23.86	49.01	2.88
15	.1	1	7.5	50.91	241.22	117.50	691.96	2.18
16	.1	2	7.5	55.34	114.17	23.31	40.16	2.51
17	1.0	1	15.0	1930.50	18926.40	316.78	1608.82	53.40
18	1.0	2	15.0	2784.16	17065.62	799.00	4064.21	3.32
19	1.0	1	15.0	1764.43	14640.12	742.05	4628.35	48.36
20	1.0	2	15.0	2293.62	17146.38	369.23	2368.32	4.26
21	1.0	1	15.0	2947.14	23726.67	413.73	2843.58	101.87
22	1.0	2	15.0	2336.03	16752.65	497.29	2968.19	3.77
23	1.0	1	15.0	1466.12	15105.87	580.86	4117.01	45.54
24	1.0	2	15.0	1901.82	15335.97	442.31	2612.48	4.19
25	.1	1	15.0	6.77	2.84	15.40	45.74	2.96
26	.1	2	15.0	97.62	674.44	89.17	702.58	3.24
27	.1	1	15.0	42.79	105.14	2.69	2.17	25.16
28	.1	2	15.0	138.19	803.65	127.88	765.38	2.88
29	.1	1	15.0	18.50	42.44	2.55	1.66	10.38
30	.1	2	15.0	605.09	3972.58	48.85	306.00	7.38
31	.1	1	15.0	11.89	60.33	110.81	901.58	4.61
32	.1	2	15.0	359.27	3585.22	23.94	185.15	7.32

data file: c:\css\gony\GONELEG.CSS [32 cases with 15 variables]
Gony+Eleg, δt: 1=1s. 0.1=100ms, M¦O: 1=o.Sicht, 2=m.Sicht, DMM:7.5mm, 15mm

	9 SIGD12	10 I2DI1	11 SIGD21	12 I1MI2	13 SIG12
1	95.31	2.47	19.60	1181708.00	18380903.20
2	2.60	.40	.17	16185632.6	155033714.51
3	351.90	3.92	31.40	265449.40	3424769.21
4	4.13	.31	.18	42252116.6	444762514.76
5	586.44	2.48	20.30	7804130.97	203991375.03
6	3.41	.31	.19	12188448.6	139627905.80
7	463.82	3.39	29.79	2138773.11	48697998.68
8	2.81	.37	.18	11696472.5	209161584.65
9	50.92	.54	1.66	5071.29	21209.92
10	1.46	.34	.11	6099.54	61043.78
11	121.11	.54	.78	15479.78	136905.11
12	1.76	.42	.18	667933.47	6575821.28
13	30.32	2.86	23.16	3175.28	19915.45
14	2.14	.43	.16	6977.13	51673.02
15	11.00	9.63	61.12	2776.74	12915.80
16	1.67	.51	.22	4301.97	18997.35
17	623.46	4.25	25.81	588323.10	9917423.17
18	2.83	.46	.29	36804742.9	276045879.30
19	487.72	7.28	44.81	8416551.42	236439282.65
20	8.23	.40	.26	27434744.1	327836132.02
21	949.40	3.06	24.90	2007140.10	49506691.53
22	2.91	.39	.23	31407094.0	316343053.56
23	476.43	8.08	66.81	219282.90	2548362.99
24	3.31	.37	.24	20195462.7	292475139.61
25	2.76	3.19	18.78	102.76	287.62
26	3.79	.64	.51	469648.09	5747318.75
27	74.80	.39	.52	107.88	314.65
28	2.36	.59	.50	626402.27	5690057.21
29	28.53	.38	.49	48.34	126.49
30	5.61	.23	.20	1226579.30	11961262.94
31	33.70	13.35	107.83	1385.14	14256.29
32	6.84	.27	.25	562005.21	8575317.95

data file: c:\css\gony\GONELEG2.CSS [16 cases with 25 variables]
Gonyaulax+P. Elegans

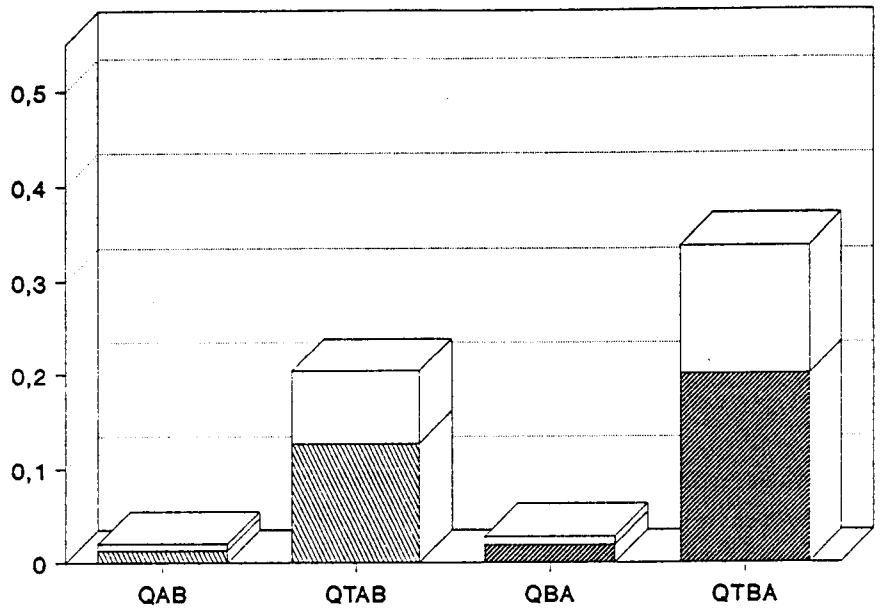
	1 &T	2 DMM	15 QAB	16 QBA	17 SAA	18 SBB	19 ABS_XY	20 QTAB	21 QTBA
1	1.0	7.5	.03	.01	1.41	.74	.23	.17	.32
2	1.0	7.5	.01	.01	.32	.39	1.19	.47	.38
3	1.0	7.5	.01	.01	2.95	2.65	.12	.32	.35
4	1.0	7.5	.01	.01	2.83	1.44	.25	.36	.71
5	.1	7.5	.03	.07	5.43	2.64	.08	.21	.43
6	.1	7.5	.01	.23	5.17	.05	.54	.03	2.79
7	.1	7.5	.07	.01	1.31	9.73	.00	.00	.00
8	.1	7.5	.15	.00	.85	25.41	.00	.00	.00
9	1.0	15.0	.00	.01	.48	.16	.59	.09	.28
10	1.0	15.0	.02	.01	.59	4.04	.10	.40	.06
11	1.0	15.0	.00	.01	1.59	.69	.18	.12	.29
12	1.0	15.0	.01	.00	.59	1.72	.37	.64	.22
13	.1	15.0	1.37	.03	.00	.03	27.04	.81	.13
14	.1	15.0	.03	.96	.10	.00	10.17	.00	.98
15	.1	15.0	.20	.41	.00	.00	79.37	.22	.07
16	.1	15.0	.20	.00	.00	21.42	1.77	37.92	.00

Data file: c:\css\gony\XYGOEL.CSS [16 cases with 9 variables]
Bonyaulax+P. Elegans

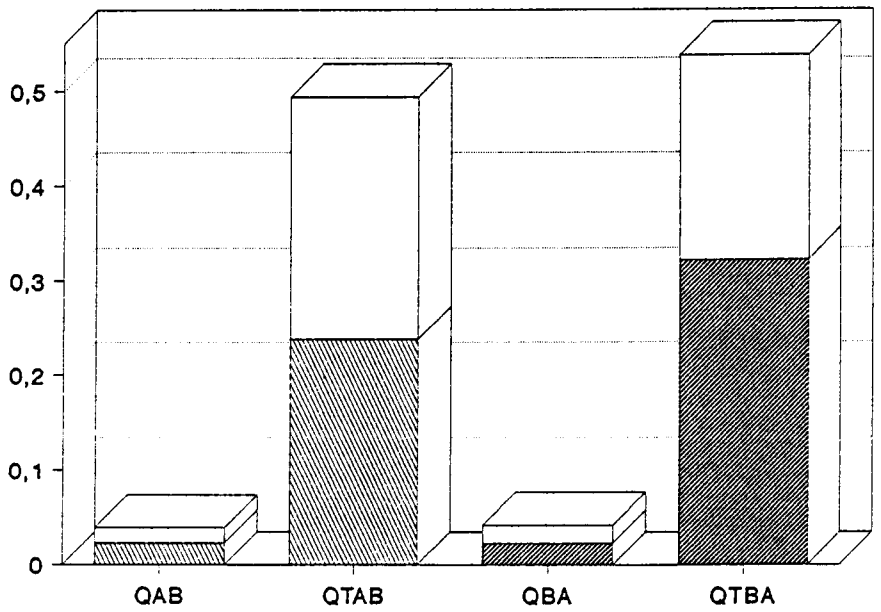
	1 &T	2 DMM	3 XA	4 YAB	5 XB	6 YBA	7 DA	8 DB
1	1.0	7.5	.588	1.399	.626	.098	.01	0.00
2	1.0	7.5	1.582	1.143	.841	.127	.01	0.00
3	1.0	7.5	.527	.257	.259	.076	.02	.01
4	1.0	7.5	.743	-.681	.217	.135	.03	.02
5	.1	7.5	.251	1.004	.437	.032	.06	-.66
6	.1	7.5	.277	2.822	.500	.239	.21	.24
7	.1	7.5	.575	.362	.110	.174	-.11	-.19
8	.1	7.5	.660	.185	.078	.278	-.16	-.26
9	1.0	15.0	.847	3.625	1.451	.176	.02	.01
10	1.0	15.0	1.167	.316	.124	.157	.02	.02
11	1.0	15.0	.702	.647	.368	.117	.02	.01
12	1.0	15.0	.994	.766	.463	.118	.01	0.00
13	.1	15.0	47.289	-14.450	-15.075	47.463	5.77	5.78
14	.1	15.0	7.513	-68.140	-66.201	7.150	1.67	1.67
15	.1	15.0	92.076	-430.713	-32.341	7.098	2.53	2.52
16	.1	15.0	50.124	-2.136	-.084	2.799	.04	.04

mixtures

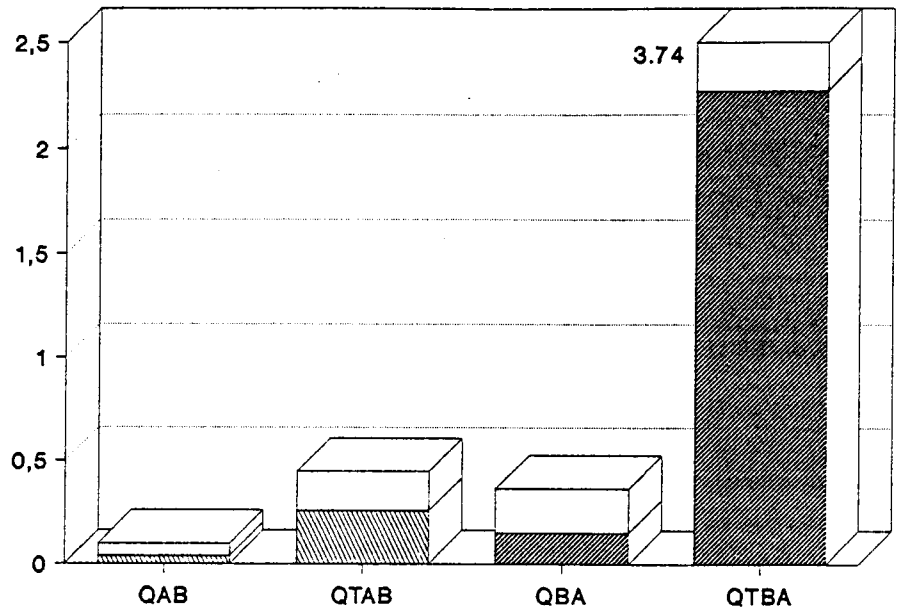
Gonyaulax+Lunula, Δt=1s, d=7.5mm



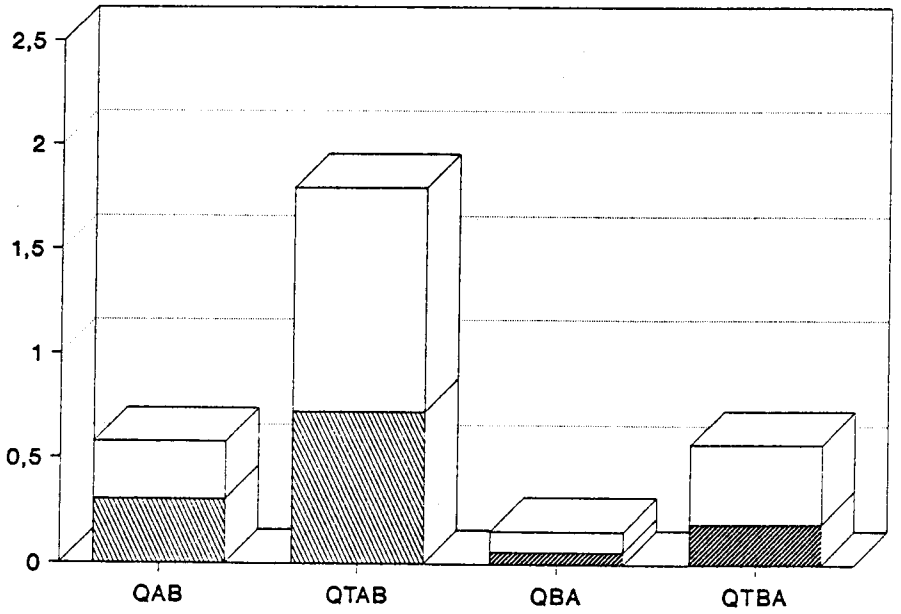
Gonyaulax+Lunula, Δ t=1s, d=15mm



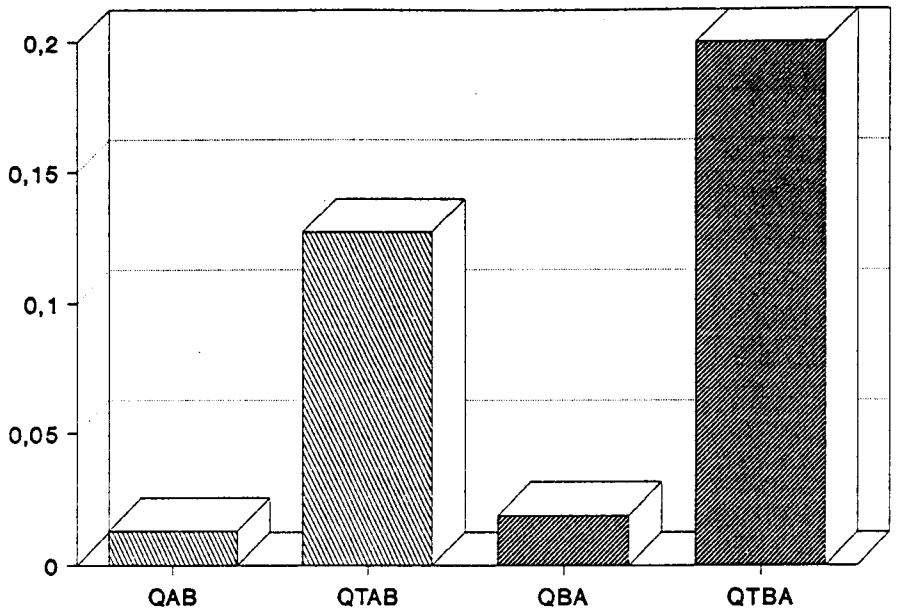
Gonyaulax+Lunula, Δ t=100ms, d=7.5mm



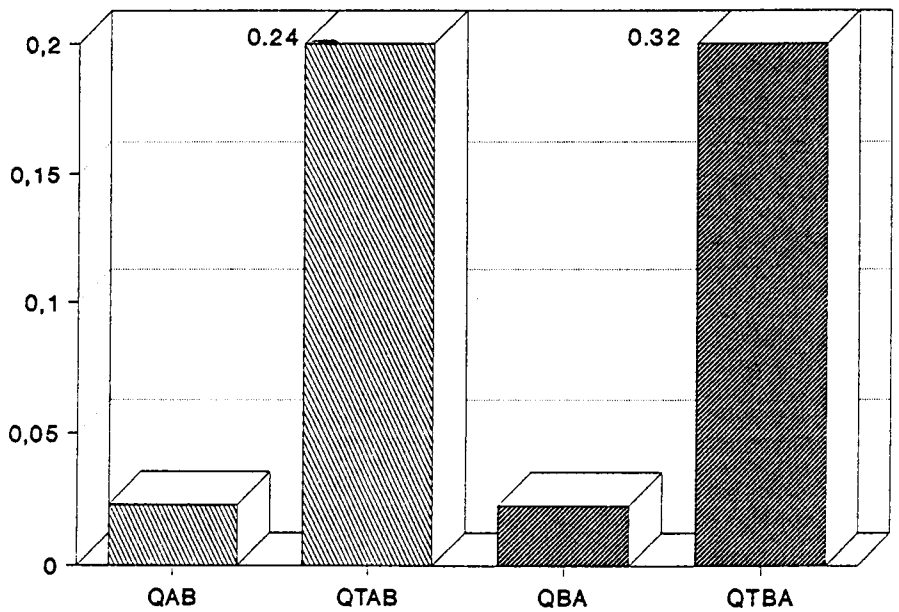
Gonyaulax+Lunula, Δ t=100ms, d=15mm



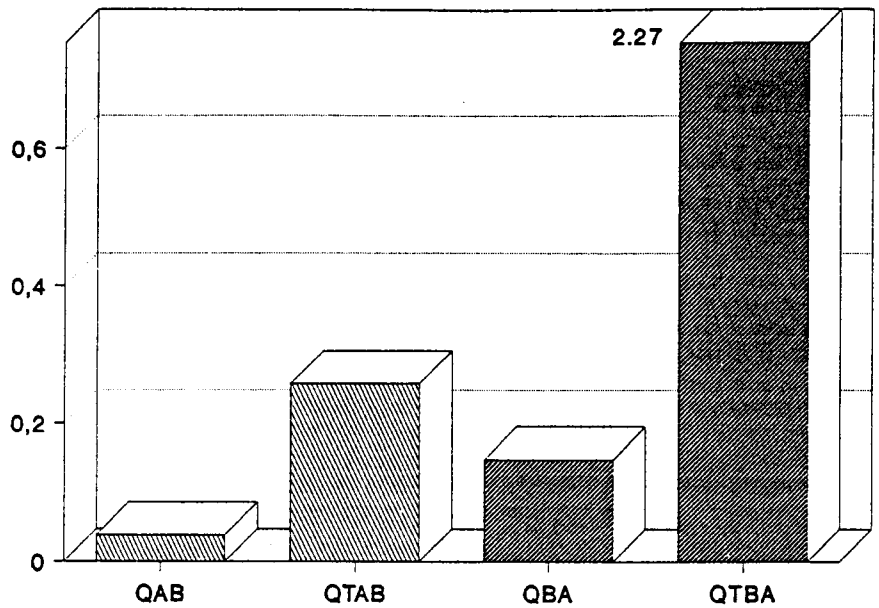
Gonyaulax+Lunula, Δt=1s, d=7.5mm



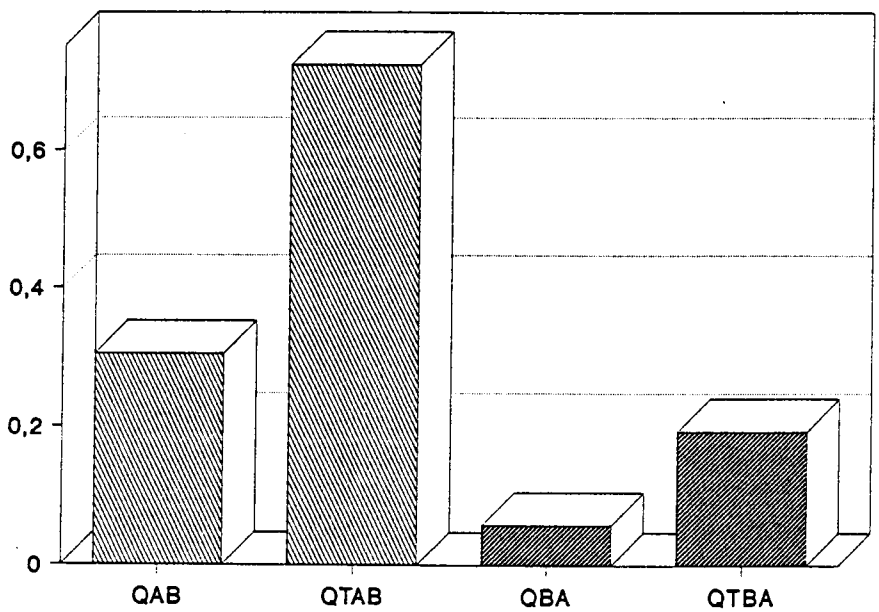
Gonyaulax+Lunula, Δt=1s, d=15mm



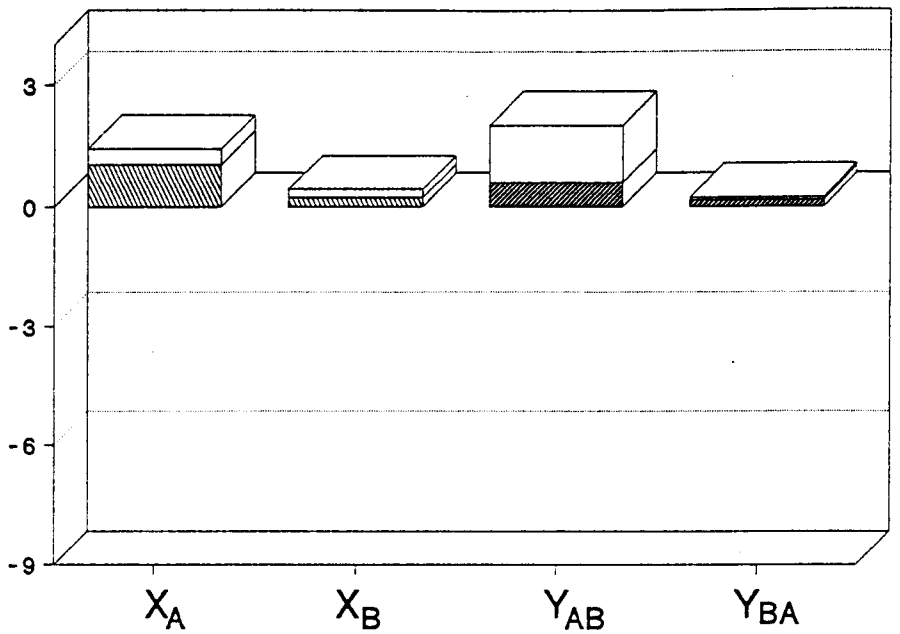
Gonyaulax+Lunula, Δ t=100ms, d=7.5mm



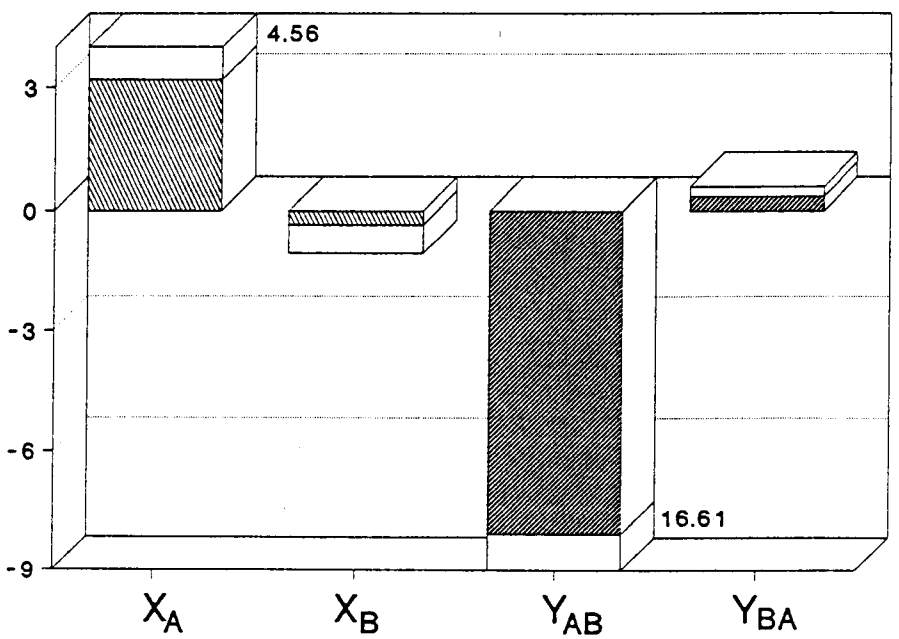
Gonyaulax+Lunula, Δ t=100ms, d=15mm



Gonyaulax+Lunula, Δ t=1s, d=7.5mm



Gonyaulax+Lunula, Δ t=1s, d=15mm



data file: c:\css\gony\QABGOLU.CSS [30 cases with 7 variables]
Gonyaulax+Lunula: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=1) 1s, 7.5mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-2.944	.026	4	4	.013134	.127298
QBA¦QTBA	-2.676	.037	4	4	.018668	.200783

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.007467	.077201	106.907	.003
QBA¦QTBA	.008992	.135809	228.104	.001

data file: c:\css\gony\QABGOLU.CSS [30 cases with 7 variables]
Gonyaulax+Lunula: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=1) 100 ms, 7.5 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 6 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1. group Mean	2 group Mean
QAB¦QTAB	-1.867	.135	3	3	.039074	.256667
QBA¦QTBA	-.981	.382	3	3	.147991	2.268595

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 6 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.059351	.192959	10.570	.173
QBA¦QTBA	.218315	3.739410	293.386	.007

data file: c:\css\gony\QABGOLU.CSS [30 cases with 7 variables]
Gonyaulax+Lunula: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=1) and (v6=2) 1s, 15 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-1.670	.146	4	4	.023148	.237550
QBA¦QTBA	-2.776	.032	4	4	.022836	.322089

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.016482	.256242	241.689	.001
QBA¦QTBA	.018854	.214803	129.802	.002

data file: c:\css\gony\QABGOLU.CSS [30 cases with 7 variables]
Gonyaulax+Lunula: Zeit: 1=1s, 2=100ms, Dist: 1=7.5mm, 2=15mm

VARIABLE LIST and missing data values:

3 QAB¦QTAB (-9999.)	4 QBA¦QTBA (-9999.)

CASE SELECTION CONDITION:
Include if:
(v5=2) and (v6=2) 100 ms, 15 mm

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)					
	2-TAILED t	TEST p-level	1 group N1	2 group N2	1 group Mean	2 group Mean
QAB¦QTAB	-.759	.477	4	4	.303558	.722500
QBA¦QTBA	-.692	.515	4	4	.057649	.192919

css/3: basic stats	T-test; indep.var: QUO_X [1 gr.= 1] [2 gr.= 2] N. of Cases = 8 (MD c-w del)			
	1 group St. Dev.	2 group St. Dev.	H0 : F	SD1=SD2 p-level
QAB¦QTAB	.276100	1.068749	14.984	.052
QBA¦QTBA	.097513	.378346	15.054	.052

data file: c:\css\gony\XYGOLU.CSS [15 cases with 9 variables]
Gonyaulax+Lunula

VARIABLE LIST and missing data values:

3 XA (-9999.) 6 YBA (-9999.)	4 YAB (-9999.)	5 XB (-9999.)

CASE SELECTION CONDITION:
Include if:
(v0 > 8) and (v0 <= 12) 15, 15 sum

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
XA	4	.5680	10.02600	3.19850	2.281321	4.56264
YAB	4	-32.8830	2.51700	-8.08775	8.306858	16.61372
XB	4	-.8870	.70200	-.35475	.360367	.72073
YBA	4	.1550	.57800	.36400	.119831	.23966

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
XA	12.99591	-6.5989
YAB	27.58705	-43.7626
XB	1.19289	-1.9024
YBA	.87863	-.1506

data file: c:\css\gony\XYGOLU.CSS [15 cases with 9 variables]
Gonyaulax+Lunula

VARIABLE LIST and missing data values:

3 XA (-9999.) 6 YBA (-9999.)	4 YAB (-9999.)	5 XB (-9999.)

CASE SELECTION CONDITION:
Include if:
(v0 <= 4) As, 7.5 um

SD = SQRT (SUM (d**2)/(n-1))

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)					
	N	Min	Max	Mean	St. Err.	St. Dev.
XA	4	.63500	1.393000	1.044250	.192801	.385602
YAB	4	-1.21900	2.188000	.594750	.708875	1.417751
XB	4	-.01100	.498000	.216500	.106114	.212227
YBA	4	.10300	.238000	.162750	.029725	.059450

css/3: basic stats	Descriptive Statistics N. of Cases = 4 (MD pairwise deleted)	
	p=.9500 Up.limit	p=.9500 Dn.limit
XA	1.872257	.21624
YAB	3.639101	-2.44960
XB	.672217	-.23922
YBA	.290407	.03509

data file: c:\css\gony\GONLUN.CSS [30 cases with 15 variables]
Gony+Lunula, &t: 1=1s, 0.1=100ms, M¦O: 1=o.Sicht, 2=m.Sicht, DMM:7.5mm, 15mm

	1 &T	2 M¦O	3 DMM	4 I1Q	5 SIG1	6 I2Q	7 SIG2	8 I1DI2
1	1.0	1	7.5	4343.92	17265.90	520.26	2583.08	45.95
2	1.0	2	7.5	5416.85	24256.59	860.34	3128.57	7.39
3	1.0	1	7.5	4044.04	24861.70	457.77	2999.99	82.57
4	1.0	2	7.5	3680.25	20029.17	642.79	2955.53	6.91
5	1.0	1	7.5	2587.17	11701.94	225.30	1608.70	68.54
6	1.0	2	7.5	3591.23	15841.82	613.98	2788.11	9.43
7	1.0	1	7.5	2379.64	11578.56	487.66	2823.22	78.35
8	1.0	2	7.5	2577.33	9455.65	418.54	1630.54	9.48
9	.1	1	7.5	658.32	4414.98	95.35	629.60	85.89
10	.1	2	7.5	458.95	2401.81	50.32	158.37	8.42
11	.1	1	7.5	1283.40	6796.30	26.18	59.06	165.54
12	.1	2	7.5	447.31	1235.56	117.79	609.12	7.12
13	.1	1	7.5	197.38	363.45	58.08	275.05	20.19
14	.1	2	7.5	1253.05	4923.60	107.32	364.28	9.42
15	1.0	1	15.0	2755.25	7983.54	377.81	1800.99	72.44
16	1.0	2	15.0	2309.46	9644.51	396.54	1146.59	6.75
17	1.0	1	15.0	1950.26	10859.16	165.01	1499.93	74.38
18	1.0	2	15.0	1522.18	6373.57	424.37	1572.23	5.57
19	1.0	1	15.0	1655.75	5849.58	564.93	3227.24	27.79
20	1.0	2	15.0	1776.16	8205.39	528.61	4036.26	6.20
21	1.0	1	15.0	2591.62	11638.24	196.06	1560.66	81.65
22	1.0	2	15.0	2000.62	10227.99	301.83	1979.41	10.94
23	.1	1	15.0	123.97	246.79	24.05	72.23	36.90
24	.1	2	15.0	452.03	3429.74	50.34	156.40	10.34
25	.1	1	15.0	149.33	229.09	157.29	1161.54	36.76
26	.1	2	15.0	88.54	164.00	13.84	29.41	9.74
27	.1	1	15.0	60.72	37.10	59.64	445.88	21.37
28	.1	2	15.0	54.73	71.22	6.57	7.66	11.07
29	.1	1	15.0	49.66	11.67	53.58	521.33	18.05
30	.1	2	15.0	304.11	1742.26	31.14	179.91	13.57

data file: c:\css\gony\GONLUN.CSS [30 cases with 15 variables]
Gony+Lunula, δt: 1=1s, 0.1=100ms, M|O: 1=o.Sicht, 2=m.Sicht, DMM:7.5mm, 15mm

	9 SIGD12	10 I2DI1	11 SIGD21	12 I1MI2	13 SIG12
1	186.09	.62	4.37	1407551.79	7485861.05
2	4.40	.19	.14	49903532.5	380779484.65
3	655.65	1.09	8.82	609451.98	3189418.91
4	4.44	.21	.14	35028283.1	377683752.67
5	324.87	.82	8.39	314628.72	2492850.51
6	4.23	.15	.11	30070790.4	256473907.94
7	427.57	1.16	8.79	573680.13	3863641.27
8	3.89	.14	.12	11254315.4	105881311.65
9	812.37	.89	6.06	23383.57	191764.53
10	4.74	.16	.10	350596.00	5743249.29
11	1174.05	.15	.30	19774.10	83233.12
12	4.45	.19	.12	752930.51	7939889.62
13	49.63	.76	3.64	7500.45	29047.39
14	5.34	.14	.10	1860371.91	12794263.82
15	172.19	.75	5.23	549905.34	2654936.78
16	5.36	.29	.26	6527477.50	58761802.91
17	408.17	.91	11.07	134710.03	724039.83
18	4.11	.30	.24	6067820.37	63628302.31
19	102.73	2.71	17.73	679791.87	7882921.10
20	4.37	.26	.22	21904469.2	321294863.54
21	448.31	1.09	17.24	317090.76	2765245.22
22	3.97	.13	.13	13932300.7	242732449.97
23	73.17	.33	1.03	2069.95	5729.59
24	8.23	.20	.21	459993.44	6224383.63
25	75.26	1.51	10.18	17641.01	142381.49
26	6.91	.15	.12	4058.25	35457.71
27	26.50	1.12	8.51	3375.26	24649.92
28	8.56	.13	.07	845.40	9028.96
29	15.14	1.20	11.94	2463.62	24144.05
30	10.40	.11	.08	321045.25	3147992.02

data file: c:\css\gony\GONLUN2.CSS [15 cases with 25 variables]
Gonyaulax+Lunula

	1 &T	2 DMM	15 QAB	16 QBA	17 SAA	18 SBB	19 ABS_XY	20 QTAB	21 QTBA
1	1.0	7.5	.02	.03	.64	.37	.430	.16	.28
2	1.0	7.5	.01	.02	1.21	.51	.290	.15	.35
3	1.0	7.5	.01	.01	.52	.13	.110	.01	.06
4	1.0	7.5	.01	.01	.85	1.36	.140	.19	.12
5	.1	7.5	.01	.02	2.06	3.59	.090	.32	.19
6	.1	7.5	.00	.40	8.23	.05	.800	.04	6.59
7	.1	7.5	.11	.03	.02	.29	1.410	.41	.03
8	1.0	15.0	.03	.05	1.42	.91	.280	.25	.40
9	1.0	15.0	.01	.02	1.64	.15	.001	.00	.00
10	1.0	15.0	.04	.01	.87	1.14	.520	.59	.45
11	1.0	15.0	.01	.01	1.68	.42	.260	.11	.44
12	.1	15.0	.11	.20	.08	.23	10.110	2.31	.76
13	.1	15.0	.09	.01	2.84	129.16	.003	.39	.01
14	.1	15.0	.32	.01	1.23	82.40	.002	.16	.00
15	.1	15.0	.69	.01	.03	2.96	.010	.03	.00

data file: c:\css\gony\XYGOLU.CSS [15 cases with 9 variables]
Gonyaulax+Lunula

	1 &T	2 DMM	3 XA	4 YAB	5 XB	6 YBA	7 DA	8 DB
1	1.0	7.5	1.393	-1.219	.153	.180	.05	.03
2	1.0	7.5	.796	1.003	.498	.103	.02	0.00
3	1.0	7.5	1.353	.407	-.011	.238	.02	.02
4	1.0	7.5	.635	2.188	.226	.130	0.00	0.00
5	.1	7.5	.513	1.272	.268	.038	.01	-.06
6	.1	7.5	.164	9.051	.106	.090	.10	.19
7	.1	7.5	9.931	-12.175	-.822	.786	.27	.25
8	1.0	15.0	1.103	-1.930	.002	.144	.10	.04
9	1.0	15.0	.568	2.517	.702	.158	-.01	-.03
10	1.0	15.0	1.336	-.773	-.719	.565	.06	.09
11	1.0	15.0	.864	-1.212	-.515	.155	.03	.04
12	.1	15.0	10.026	-32.883	-.887	.578	.35	.26
13	.1	15.0	.654	-.058	-.014	.107	.15	.22
14	.1	15.0	1.034	-.135	-.014	.122	2.11	1.96
15	.1	15.0	9.722	-3.335	-.344	.999	18.09	18.09