

**katarzyna mirczak** | abysses

**10 971** meters. This is the depth of the deepest abyss on Earth 'The Challenger Deep'

A critical point – if one gets deeper, he'll find himself under the skin of the Earth.

The skin is the most natural of borders: it sets the limits of safety.

The deepest abyss that our body falls into is the Delta frequency band (0.5Hz-3Hz).

This state is characterized by the slowest of brainwaves. It is the deepest phase of sleep, when the fullest regeneration of the organism takes place.

I served as an objective example of a research that I did not wish to make about myself.

Neither did I want to do an exhibition which would concern me personally.

I have changed my mind a few times, and I have always come back to square one.

I have not slept a full night for three years now. I have actually started to lead a double life

– a daily life with my family, my daughter, my duties and work, and my nocturnal life

– with its quietness, sitting on the stairs in front of the block, with a new kind of time.

This is not insomnia or any other clinical disorder. It's like living during a polar night, but without the polar night.

For about 30 years, I have been dreaming the same dream.

Divided into three parts, haunting me like three Furies.

Jim Morrison in 'The Lords: Notes on Vision' wrote:

Sleep is an under-ocean dipped into each night / At morning, awake dripping, gasping, eyes / stinging.

I like to watch the ocean.

From the shore.

abysses | otchłanie

### **Katarzyna Mirczak**

Born in 1980 in Wałbrzych, Poland,  
she graduated from the Institute of Archeology  
at the Jagiellonian University in Krakow.

Mirczak has been working with objects and images found in archives of obscure,  
hardly accessible institutions, exploring the fields of science and medicine,  
violence and death, and introducing elements of foreign visual language  
into the realm of contemporary art – displaying objects in a disciplined,  
cold way, always against a neutral, white background, blurring the boundary  
between the genre of still life and scientific proofs, samples or evidence of crime.

Her works have been exhibited at important exhibitions and fairs  
at the Museum of Modern Art in Warsaw,  
Kunsthalle Bratislava, at the Paris Photo,  
the AIPAD Photography Show in New York,  
at the Fundacja Archeologii Fotografii  
(The Archeology of Photography Foundation) and Krakow Photomonth.

Katarzyna Mirczak is represented by Erick Franck Fine Art in London  
and Kasia Michalski Gallery in Warsaw.

22:02:38 - 06:29:26

the first dream ever to be documented was the dream of dumuzi from uruk (now southern iraq) dated ca. 2750 bc. in 1929, the invention of the electroencephalogram catalyzed the development of contemporary somnology. the image of dream was codified and its architecture discovered, and this opened new possibilities of interpretation. polysomnography tests conducted on katarzyna mirczak at the sleep disorders center at the institute of psychiatry and neurology in warsaw constituted the point of departure for her individual exhibition at the kasia michalski gallery. as a result of an analysis of a night-long examination (eeg, eea, emg, ecg, blood oxygen saturation level, respiratory movements of chest and abdomen etc.), a detailed description – the sleep profile of the artist – emerged. fascinated by the mathematic structure of the world, mirczak is known for projects which generate a cognitive tension between the objective and the scientific on the one hand, and the irrational and the abjective (to use julia kristeva's term) [or: emotional and even atavistic] on the other. yet again in her most recent project, the artist connects science and new media. by analyzing and interpreting the nature of sleep and dreams, she attempts to grasp a wide range of phenomena related to the human body, scrutinizing its cosmic, coincidental origin the awareness of the absurd beauty of the fact that within our lives we live another life – internal, untouchable, with its own losses and logic, is superimposed on the fascination of the uniqueness of the bodily matter. similar to her previous works (e.g. ether, tools of crime), katarzyna mirczak meticulously designs the space for self-obliteration. one of the works presented in the exhibition is an installation created together with a poznan-based composer, rafał zapafa – a specialist in transcending data into the sphere of music. utilizing the multi-channel medical documentation of one of the rem phases of katarzyna mirczak's sleep, zapafa interpreted her dream, expressing it in an unconventional form, distancing it from the usual scientific, basing her interpretation on an image, and inscribing it into the audiosphere. a spacial construction – a tunnel made of multilayered black chiffon – occupies almost the entire gallery space. the viewers, drawn into the dark abyss of mirczak and zapafa's installation, are invited somewhat to participate in an intimate experience of somebody else's dream, to merge within the black lava of the piece. the theme of the shift of registers and its consequent tension is also visible in mirczak's self-recording cycle which is also presented at the exhibition. the artist transposes the data defining the rem phase into the field of art, basing on an image of the eyeballs movement and its digital equivalent. the title, abysses, suggests inertia, an observational paralysis. taking up the topic of dream, mirczak faces the issue of identity and memory, whose layering, multiplied echo is recurring forever in dreams.

IT IS CONFESSED, THAT THE UTMOST EFFORT OF HUMAN REASON IS TO REDUCE THE PRINCIPLES,  
PRODUCTIVE OF NATURAL PHENOMENA, TO A GREATER SIMPLICITY,  
AND TO RESOLVE THE MANY PARTICULAR EFFECTS INTO A FEW GENERAL CAUSES,  
BY MEANS OF REASONING FROM ANALOGY, EXPERIENCE, AND OBSERVATION.  
BUT AS TO THE CAUSES OF THESE GENERAL CAUSES, WE SHOULD IN VAIN ATTEMPT THEIR DISCOVERY;  
NOR SHALL WE EVER BE ABLE TO SATISFY OURSELVES, BY ANY PARTICULAR EXPLICATION OF THEM.  
THESE ULTIMATE SPRINGS AND PRINCIPLES ARE TOTALLY SHUT UP FROM HUMAN CURIOSITY AND ENQUIRY.

**D. Hume**  
(An Enquiry Concerning Human Understanding and other writings')



Sleep Disorders Center  
Institute of Psychiatry and Neurology in Warsaw

#### REM sleep

We registered five REM periods. The bioelectric activity during REM sleep was characterized by an exceptionally frequent appearance of series of "saw-tooth" brain waves. The waves occurred in rather long series, usually preceding rapid eye movements (EM) or following EM. The "saw-tooth" waves were registered in periods without EM (which usually is most common).

It is quite rare to observe the "saw-tooth" waves during EM. In the discussed sleep we often registered such a phenomenon. (It is thought that the "saw-tooth" waves are a neurophysiological substitute to EM).

Light turned off: 10:13:38 PM

Light turned on: 06:29:25 AM

Total recording time: 506.8 min

REM episodes: 5

Wakings: 5

Duration of respiratory events:	Average (sec)	Max (sec)
Apnea (NREM)	0	0
Shallow breathing (NREM)	0	0
Apnea (REM)	60	60
Shallow breathing (REM)	0	0

Examination night at the Sleep Disorders Center at the Institute of Psychiatry and Neurology in Warsaw, June 24th, 2015

5th REM phase, 06:05:23 - 06:26:53

I dreamt about Frida Kahlo swimming in lava.

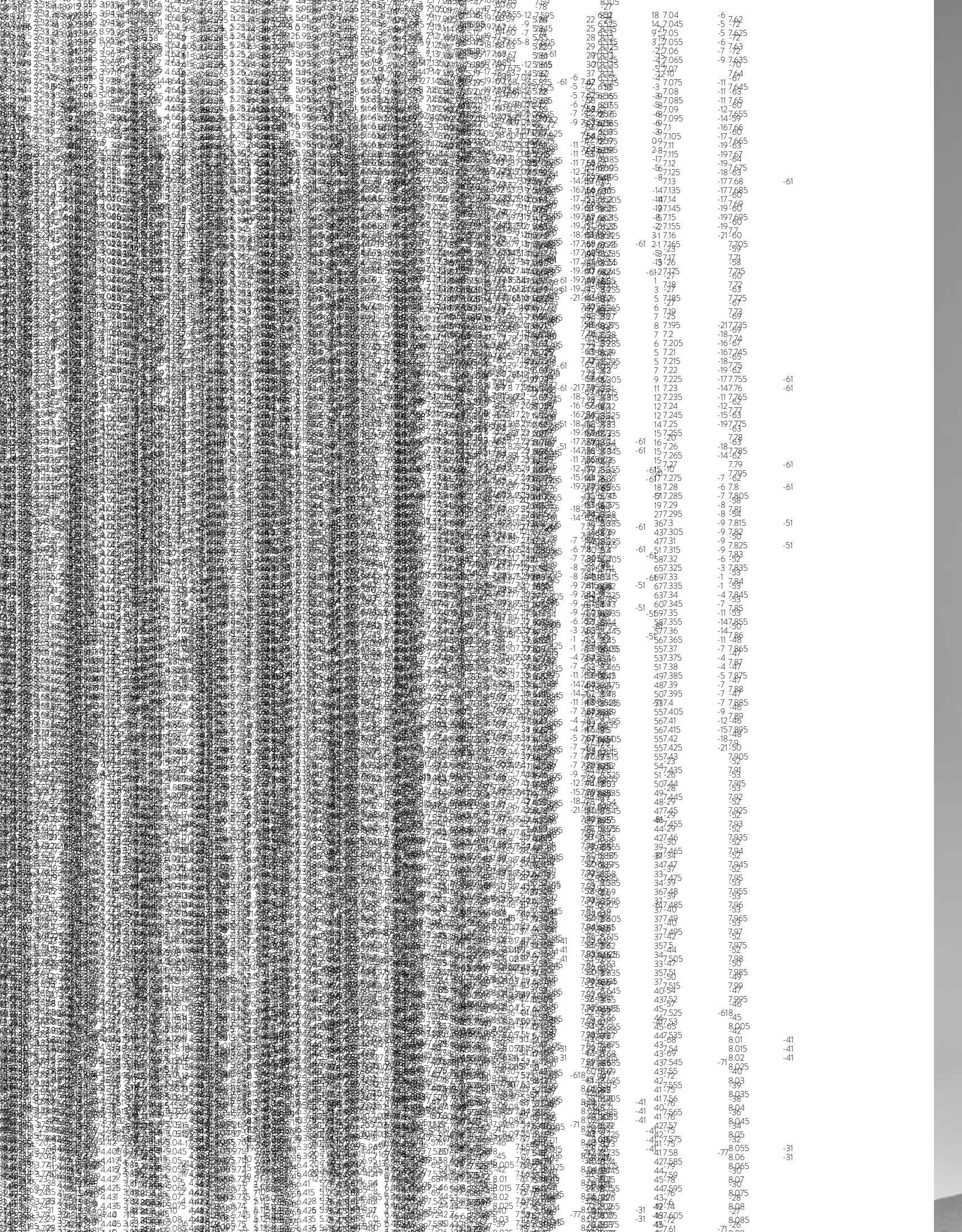
Immersed, smiling

While the lava burned down the city.



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		4.765	5.265	9	-1
		4.77	5.27	10	0
		4.775	5.275	10	0
		4.78	5.28	10	-1
		4.785	5.285	10	-1
		4.79	5.29	11	1
		4.795	5.295	11	3
		4.8	5.3	11	4
		4.805	5.305	10	4
		4.81	5.31	10	2
		4.815	5.315	10	-2
		4.82	5.32	9	-6
		4.825	5.325	10	-10
		4.83	5.33	12	-11
		4.835	5.335	14	-9
		4.84	5.34	13	-7
		4.845	5.345	10	-5
		4.85	5.35	5	-2
		4.855	5.355	0	1
		4.86	5.36	5	4
		4.865	5.365	5	5
		4.87	5.37	8	3
		4.875	5.375	9	3
		4.88	5.38	7	1
		4.885	5.385	6	0
		4.89	5.39	7	0
		4.895	5.395	9	-2
		4.9	5.4	-10	-3
		4.905	5.405	-10	-1
		4.91	5.41	-11	2
		4.915	5.415	-14	4
		4.92	5.42	-16	4
		4.925	5.425	-19	4
		4.93	5.43	-21	5
		4.935	5.435	-21	6
		4.94	5.44	-22	7
		4.945	5.445	-22	7
		4.95	5.45	-23	8
		4.955	5.455	-24	9
		4.96	5.46	-26	12
		4.965	5.465	-29	13
		4.97	5.47	-32	15
		4.975	5.475	-33	16
		4.98	5.48	-32	15
		4.985	5.485	-31	15
		4.99	5.49	-30	14
		4.995	5.495	-30	14
		5	5.5	-31	13
		5.005	5.505	-32	12
		5.01	5.51	-31	12
		5.015	5.515	-30	12
		5.02	5.52	-27	13
		5.025	5.525	-23	14
		5.03	5.53	-19	15
		5.035	5.535	-17	15
		5.04	5.54	-15	15
		5.045	5.545	-13	12
		5.05	5.55	-12	7
		5.055	5.555	-12	3
		5.06	5.56	-13	2
		5.065	5.565	-12	3
		5.07	5.57	-11	3
		5.075	5.575	-10	2
		5.08	5.58	-8	-1
		5.085	5.585	-9	-3
		5.09	5.59	-11	-4
		5.095	5.595	-13	-3
		5.1	5.6	-12	-1
6.01	48	5.105	5.605	-10	2
6.015	46	5.11	5.61	-8	5
6.02	44	5.115	5.615	-8	8
6.025	43	5.12	5.62	-6	9
6.03	47	5.125	5.625	-6	8
6.035	53	5.13	5.63	-10	5
6.04	58	5.135	5.635	-15	4
6.045	59	5.14	5.64	-20	4
6.05	58	5.145	5.645	-22	6
6.055	56	5.15	5.65	-21	6
6.06	56	5.155	5.655	-17	6
6.065	58	5.16	5.66	-12	7
6.07	59	5.165	5.665	-9	8
6.075	59	5.17	5.67	-7	8
6.08	58	5.175	5.675	-8	9
6.085	55	5.18	5.68	-10	9
6.09	50	5.185	5.685	-12	8
6.095	44	5.19	5.69	-14	7
6.1	39	5.195	5.695	-16	5
6.105	35	5.2	5.7	-16	3
6.11	33	5.205	5.705	-14	1
6.115	34	5.21	5.71	-9	0
6.12	36	5.215	5.715	-4	0
6.125	38	5.22	5.72	0	1
6.13	40	5.225	5.725	1	1
6.135	40	5.23	5.73	-3	1
6.14	39	5.235	5.735	-8	2
6.145	39	5.24	5.74	-12	3
6.15	40	5.245	5.745	-14	5
6.155	41	5.25	5.75	-13	6
6.16	44	5.255	5.755	-9	7
6.165	47	5.26	5.76	-4	6
6.17	50	5.265	5.765	-1	4
6.175	53	5.27	5.77	1	4
6.18	55	5.275	5.775	0	4
6.185	55	5.28	5.78	-1	3
6.19	53	5.285	5.785	-1	1
6.195	52	5.29	5.79	-1	0
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6.23	65	5.825	5.825	10	10
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6.24	69	5.835	5.835	19	19
6.245	69	5.84	5.84	22	22
6.25	70	5.845	5.845	25	25
6.255	71	5.85	5.85	28	28
6.26	72	5.855	5.855	29	29
6.265	74	5.86	5.86	29	29
6.27	76	5.865	5.865	30	30
6.275	78	5.87	5.87	37	37
6.28	80	5.875	5.875	47	47
6.285	79	5.88	5.88	54	54
6.29	78	5.885	5.885	58	58
6.295	77	5.89	5.89	58	58
6.3	78	5.895	5.895	58	58
6.305	80	5.9	5.9	56	56
6.31	80	5.905	5.905	56	56
6.315	79				
6.32	78				
6.325	78				
6.33	79				
6.335	81				
6.34	84				
6.345	86				





Years dissolve into months, months into days, days into hours, minutes into seconds, and the seconds leak. (...)  
What am I? I am a certain amount of seconds – which leaked.  
The result: none. None.

**W. Gombrowicz**  
(‘Cosmos’)

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sonification of the polysomnographic data  
generative sound instrument  
created in the Max/MSP environment  
instruments: guitar, flute (frullato, overdriven), harp, and percussion

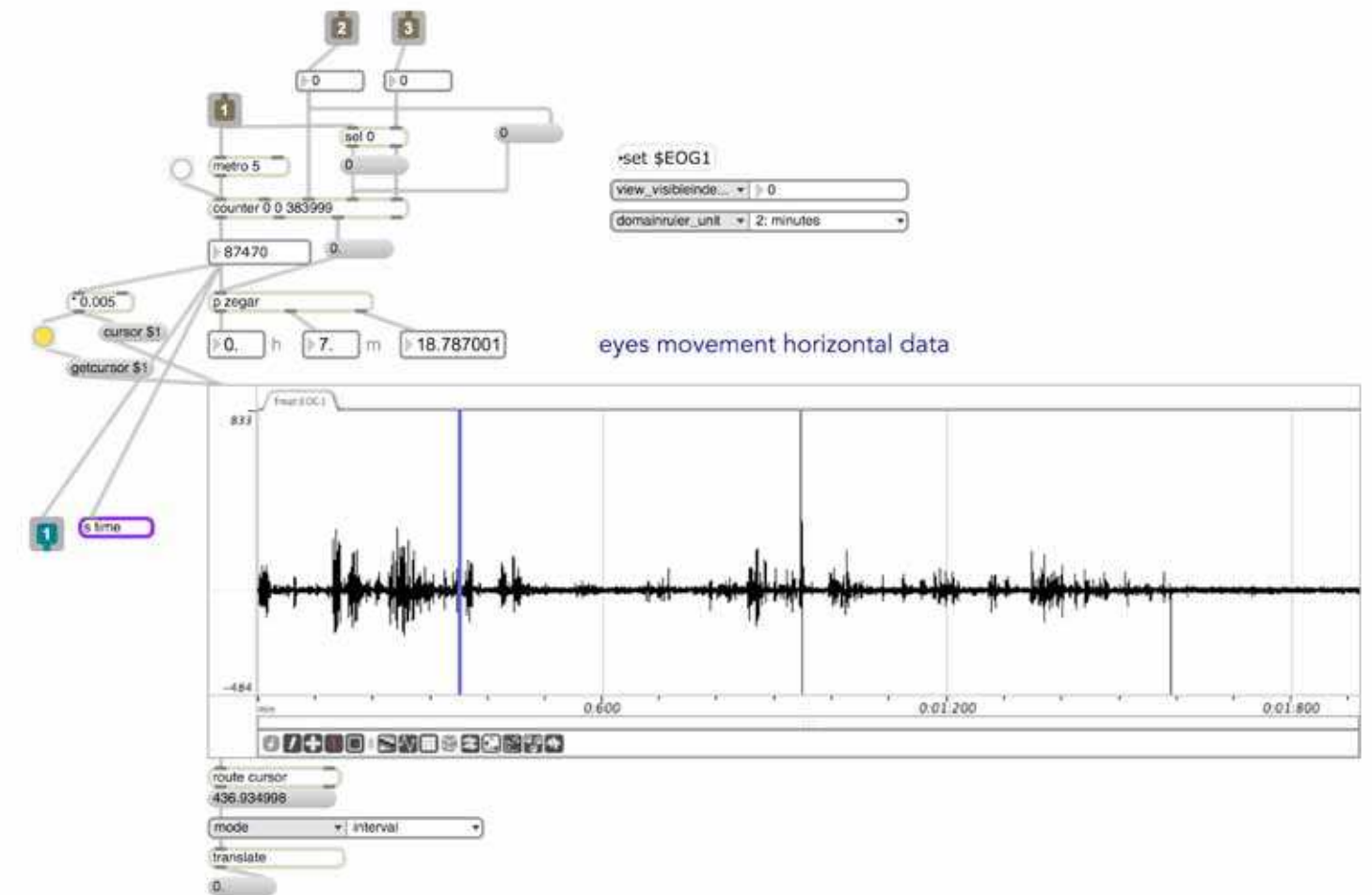
21 minutes and 30 seconds of the 5th REM phase  
sampling frequency: 200 Hz (every 0,005 seconds)

a violent stream of objective data describing the dreaming organism's reactions constitutes a music score

for instance, I heard the EOG (eyeball movement) data in the abstract movements of the passages of acoustic guitars

the structure of time in a dream expands and contracts according to its own rules, entirely disassociated from the time measured by clocks

fortunately, the structure of time in music is similar



## Rafał Zapala

A composer, improviser (piano, percussion, live electronics) and sound artist.

With a PhD in music composition, he works as an Assistant Professor at the Department of Composition of the Ignacy Jan Paderewski Academy of Music in Poznań. A participant of Karlheinz Stockhausen Concerts and Courses, the Acanthes Courses (with IRCAM, T. Murail and B. Furrer), P. Oliveros. A. Lucier (STEIM Amsterdam) and others.

Artist-in-residence at Stanford University-CCRMA (Jan.-Mar. 2014).

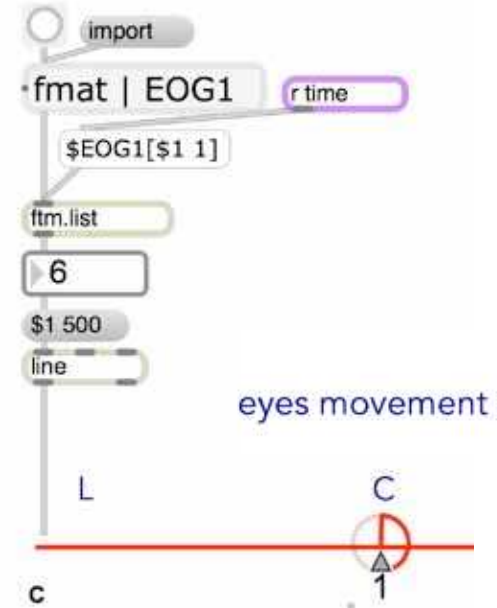
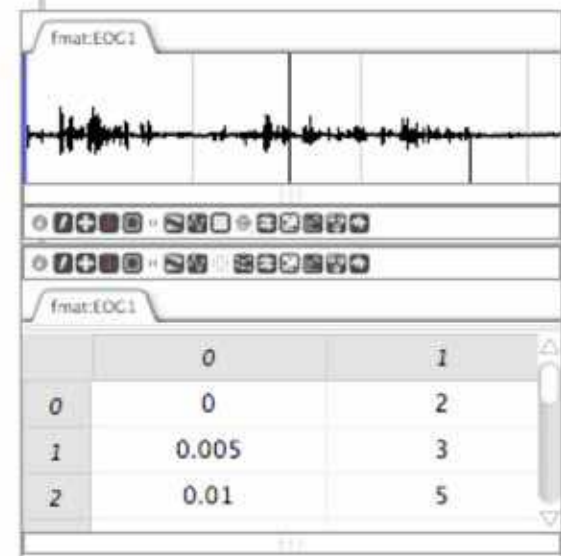
Founder and head of an\_ARCHE NewMusicFoundation and many ensembles performing contemporary, improvised, and electronic music.

Author of Sensorium – a monumental sound installation for cities, and co-author of the Polish Pavilion at the Prague Quadrennial: “Post-Apocalypsis” (gold medal in the Sound Design category).

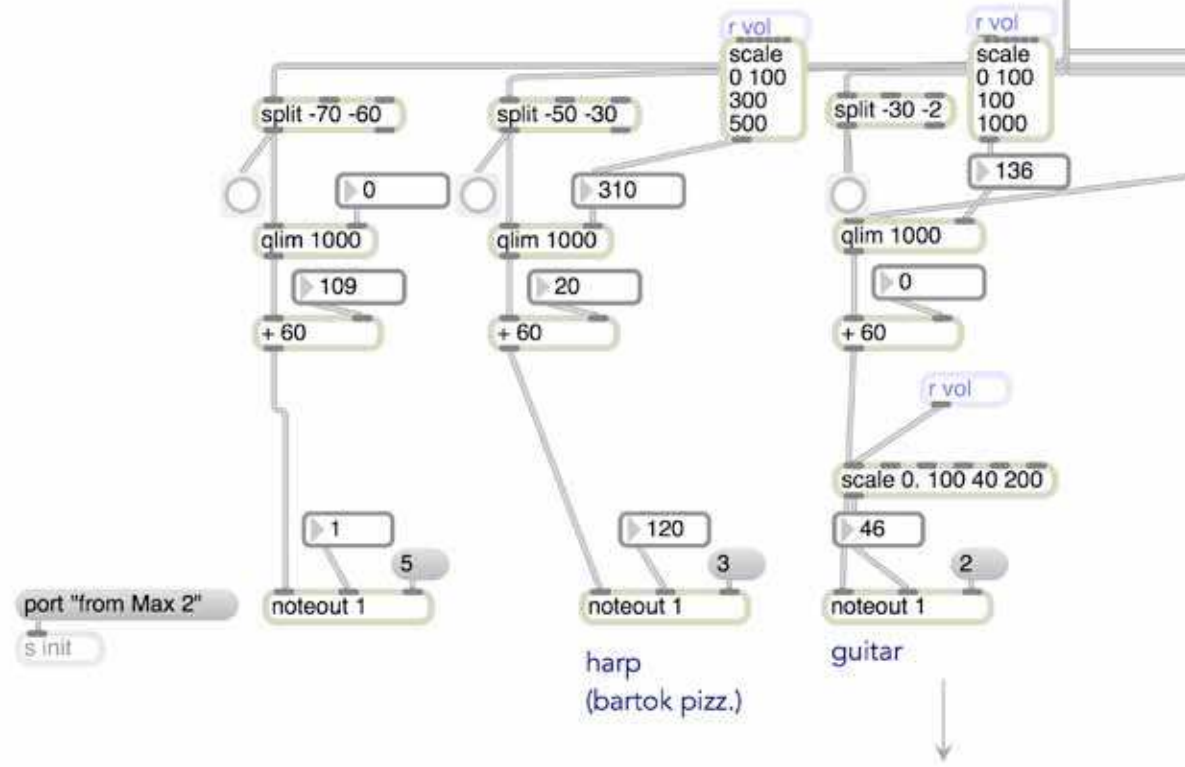
His concept of *Live Electronic Preparation (LEP Technique)* has been published in the Oxford Handbook of Interactive Audio (Oxford University Press, 2014).

Zapala does not recognize any boundaries between music acquired through academic education, the experience of counterculture or collaborating with artists from other fields. His music was presented at contemporary music festivals, in jazz clubs, experimental music venues as well as in open-air, public spaces.

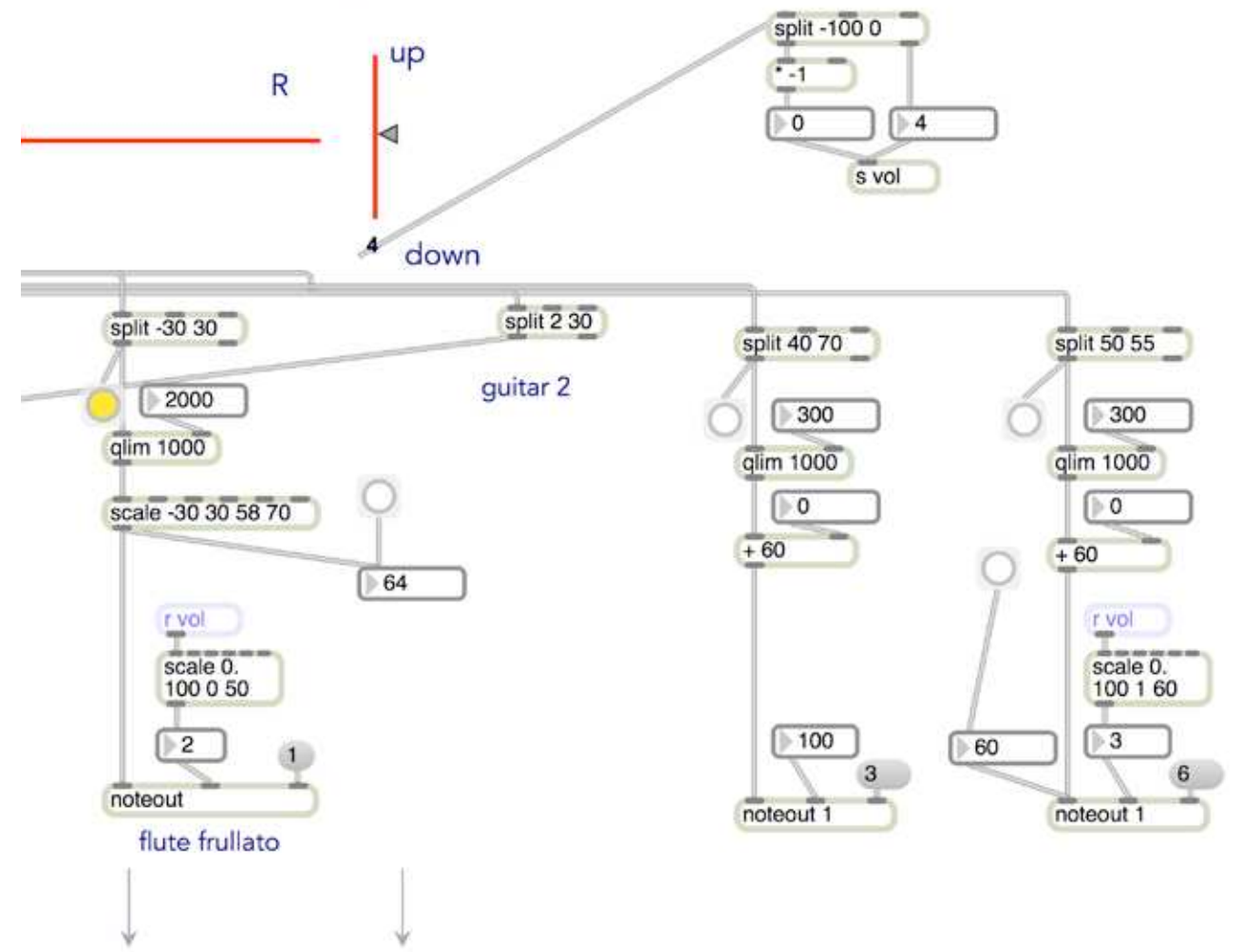
set \$EOG1 eyes movement data



eyes movement



to conTibre



player

SAWTOOTH WAVES

THE SAWTOOTH WAVE IS A DISTINCTIVE PATTERN IN ELECTROENCEPHALOGRAMS (EEG) THAT OCCURS ONLY IN REM SLEEP AND THAT IS RECORDED MAINLY IN THE CENTRAL SCALP AREA.  
EEG FREQUENCY BETWEEN 2 AND 5 Hz  
EEG AMPLITUDE IN THE RANGE 20-100  $\mu$ V



EOG

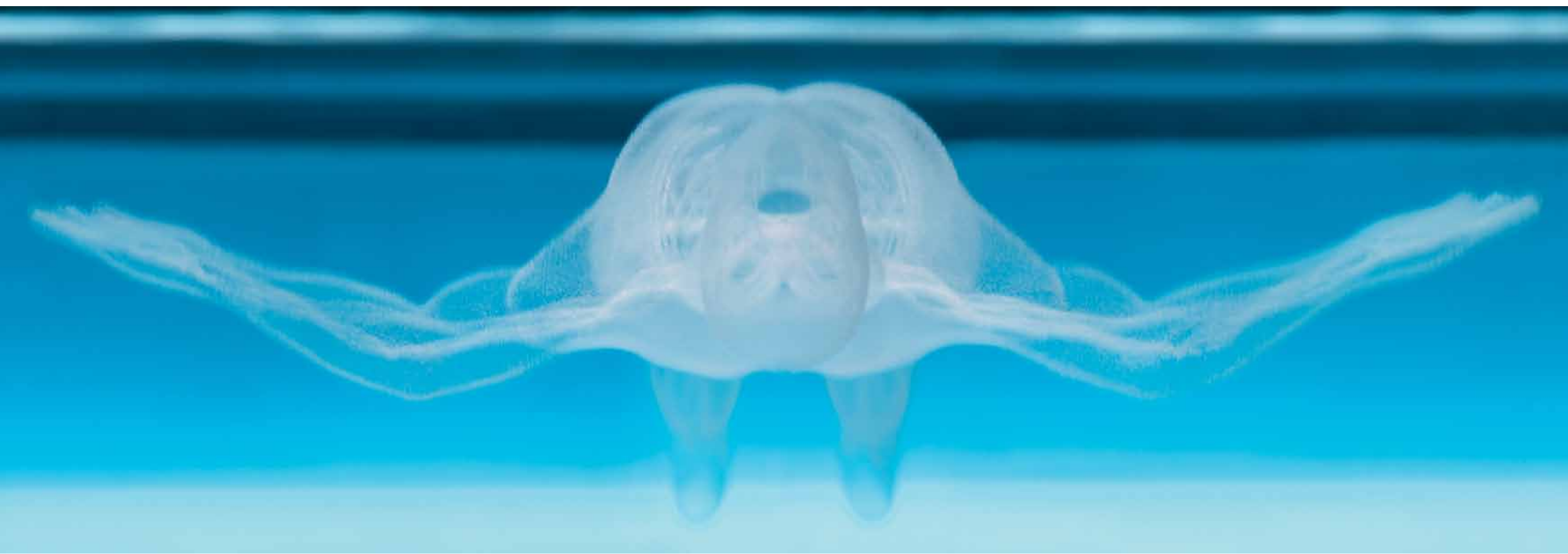
A TECHNIQUE FOR MEASURING THE ELECTRICAL ACTIVITY OF THE RETINA  
OF THE EYE OVER A PERIOD OF TIME.  
EOG TRACES OF EYE MOVEMENT INDICATE RAPID EYE MOVEMENTS  
DURING REM SLEEP.



FLOW  
CHEST  
ABDOMEN

TWO VELCRO BANDS, ONE PLACED AROUND THE CHEST UNDER THE BREASTS AND ONE AROUND THE ABDOMEN, SERVE TO DETERMINE CHEST WALL AND ABDOMINAL MOVEMENTS DURING BREATHING. EACH BAND IS JOINED TOGETHER BY PIEZO CRYSTAL TRANSDUCER. THE FORCE OF CHEST AND ABDOMINAL EXPANSION ON THE BANDS STRETCHES THE TRANSDUCER AND CONVEYS THE SIGNAL TO A PHYSIOLOGICAL RECORDER. COMBINED WITH THE AIRFLOW SENSOR, THESE INSTRUMENTS REGISTER AND CATEGORIZE RESPIRATORY EVENTS SUCH AS APNEA DURING TEST.





KASIA  
MICHALSKI

Gallery

The catalogue was published on the occasion of the exhibition  
Abysses by Katarzyna Mirczak at the Kasia Michalski Gallery,  
September 25th – November 5th 2015

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**Thanks to**

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Rafał Zapała

**List of works**

self recording I, II, III, IV  
Untitled, 2015  
Peripheral nervous system, 2015

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