

**BioN report: the intensive course "Noninvasive methodologies to study whole brain function", October 19-22, SPbU, Saint Petersburg, Russia**

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During the intensive course "Noninvasive methodologies to study whole brain function" we attended the lectures dedicated to contemporary noninvasive methods of studying brain like magnetic resonance imaging (fMRI), positron emission topography (PET), transcranial magnetic stimulation (TMS), and, very recently, near-infrared spectroscopy (NIRS), also called optical imaging (OI) and diffusion-tensor imaging (DTI).

The course went on 4 days and accordingly contained 4 parts:

- 1) "Magnetoencephalography and electroencephalography". Dr D. Kicic, Dr A. Ossadtchi and Dr V. Nikulin described the principles and problems of these methodologies. There was the most interesting part about the physical laws, which underlie the method of magnetoencephalography. Also the information about the data analysis techniques was very attractive.
- 2) "Transcranial magnetic stimulation and MEG/EEG, Optical Imaging" At first Dr T. A. Stroganova told us about clinical applications of MEG, it was very useful information. Than Dr D. Kicic and Dr Rosalia Bikhullina described the principles and applications of transcranial magnetic stimulation, noninvasive method of influence on brain activity. Later Dr Ilka Nissilä reports about the materially dissimilar techniques of studying the whole brain – the optical imaging.
- 3) "Magnetic resonance imaging" In the third part of course Dr V. Klucharev, Dr Simo Vanni, Dr Linda Henriksson gave us the information about the fMRI, very beautiful and actual method of visualization of the whole brain activity.
- 4) At the last part Dr A. Ossadtchi shows us how to practically calculate the MEG data. He described the method of power component analysis and the method of independent component analysis. Also it were discussed several statistical techniques to calculate the statistical significance of obtained data.

The course was very useful and interesting and I would like to thank Dr A. Ossadtchi, Dr D. Kicic, and Dr V. Nikulin, Dr T. A. Stroganova, Dr Rosalia Bikhullina, Dr Ilka Nissilä, Dr V. Klucharev, Dr Simo Vanni and Dr Linda Henriksson. Also I would like to thank Anna Shestakova, Viktoria Moiseeva, Olga Martynova and BioN for organization of the meeting.

Travel and stay costs were sponsored by program BioN with support of grant Tempus.