

Developmental coordination disorder in children – experimental work and data annotation



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Developmental coordination disorder (DCD) is described as a motor skill disorder characterized by a marked impairment in the development of motor coordination abilities that significantly interferes with performance of daily activities and/or academic achievement. Since some electrophysiological studies suggest differences between children with/without motor development problems, we prepared an experimental protocol and performed electrophysiological experiments with the aim to make a step towards a possible diagnosis of this disorder using the event related potentials (ERP) technique. The second aim is to properly annotate the obtained raw data with relevant metadata and promote their long term sustainability. The experimental protocol is based on auditory stimulation using the stimuli representing animals and their sounds: bleating goat (80% probability of occurrence), barking dog (5%), meowing cat (5%), meowing dog (5%), and barking cat (5%); 600 stimuli are used in total during the experimental session. The tested subjects were children of younger school age from elementary schools in Pilsen. All experiments were performed in a sound and electrically shielded booth placed in an electrophysiology lab. EEG/ERP activity was recorded using standard 10-20 international system with the reference electrode placed above the nose. The data were collected and annotated respecting the current outcomes of INCF Program on Standards for Data Sharing, Task Force on Electrophysiology and the group developing the Ontology for Experimental Neurophysiology (OEN, <https://github.com/G-Node/OEN>). The data with metadata will be stored in the EEGbase database (<http://eegdatabase.kiv.zcu.cz/>) after several conceptual and technological changes (deployment of noSQL database, changes in the user interface) in this web application.

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