



Sensory Processes: From Molecules to Cognition

April 12 - 13, 2016, Veranstaltungszentrum, Ruhr University Bochum

Tuesday April 12, morning (9:25 – 12:35)

Session 1 Cellular Mechanisms

DIRK DIETRICH

Laboratory of Experimental Neurophysiology, Department of Neurosurgery,
University of Bonn Medical School

Activity-dependent myelination and neuro-glia synapses: role of oligodendrocyte precursor cells

Uniquely amongst glial cells, the numerous NG2-expressing oligodendrocyte precursor cells (NG2 cells) establish hundreds of synaptic junctions with presynaptic axons throughout the central nervous system. It is an emerging concept of brain development that this synaptic signaling could be key to tuning myelination of axons according to the electrical needs of neurons, but it has remained unclear how NG2 cells may integrate synaptic input in order to respond.

I will present data showing that NG2 cells possess a dedicated synaptic integration repertoire distinct from neurons and other glial cells which is very well-suited to mediate responses of these glial precursor cells to neuronal firing required for activity-dependent myelination.

