

Sensori-motor networks encoding hand grasping in the primate brain

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Abstract

Hand function plays an important role in all primate species, and its loss is associated with severe disability. Grasping movements are complex actions that require the integration of sensory and cognitive signals to generate meaningful behavior. To achieve this computation, specialized areas in the primate brain are functionally connected, in particular in the parietal (anterior intra parietal area, AIP), premotor (area F5), and primary motor cortex (M1 hand area). This presentation will highlight recent experimental results in non-human primates to characterize how individual neurons in these cortical areas interact in order to generate grasping movements on the basis of sensory signals, and how such neuronal population signals can be decoded to control hand actions, e.g., for operating a neural prosthesis.

Short Biography



Hans Scherberger received his Master in Mathematics (1993) and his Medical Doctor (1996) from Freiburg University, Germany. He currently heads the Neurobiology Lab at the German Primate Center and is Professor for Primate Neurobiology at Göttingen University (since 2008). He was trained in systems electrophysiology at the University of Zurich (1995-1998) and at the California Institute of Technology (1998-2003) before leading a research group at the Institute of Neuroinformatics at Zurich University and ETH (2004-2009). His research focuses on neural coding and decoding of hand movements and their interactions with sensory systems.