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### **PhD or Post-doc position:**

Spatiotemporal information processing in the cerebellum.

The cerebellum, which plays a major role in the control, timing and learning of skilled movements, is at the heart of motor coordination. Our goal is to understand the circuit, neuronal and synaptic mechanisms within the cerebellar cortex underlying temporal computations and motor coordination. We will use novel optical mapping methods developed in our lab (Valera et al., eLife 2016) in brain slices in order to establish both excitatory and inhibitory synaptic maps in cerebellar cortical modules in vitro. These functional maps will be combined with cell lineage and connectome description using brainbow techniques. Temporal variables enabling multimodal information processing conveyed by mossy fibers will be assessed using optical tools (iGluSnFR) and two-photon microscopy. Ultimately, in vivo experiments using motion capture system (Vicon and/or DeepLabCut) will be performed in order to relate behavior and synaptic connectivity.

Techniques: electrophysiology, two-photon imaging, optogenetic, motion capture and in vivo electroporation.

Requested skills: a background in electrophysiology or in advanced imaging techniques is requested.

We offer a PhD position or a post-doc position for two years with a potential opportunity for renewal.

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