On the topic of: "Dynamics of whiskers and motor plant affect active tactile sensation"

ELSC cordially invite you
to the lecture given by:

David Golomb
Department of Physiology, Ben-Gurion University

On the topic of:

"Bending properties of whisker and pre-neuronal information transfer"

The lecture will be held on Thursday, December 26, 2013
at 17:00, at ELSC: Silverman Bldg., 3rd Wing, 6th Floor, Edmond J. Safra Campus

Light refreshments at 16:45

Abstract:

Touch via whiskers is a main modality for rodents. Their whiskers are approximately conical. Here we use theoretical models based on the quasi-static hypothesis and experimental methods to analyze interactions of mouse whiskers with objects. When pushed into objects, conical whiskers suddenly slip at a critical angle. In contrast, cylindrical whiskers do not slip for biologically plausible movements. Conical whiskers sweep across objects and textures in characteristic sequences of brief sticks and slips, which provide information about the tactile world. In contrast, cylindrical whiskers stick and remain stuck, even when sweeping across fine textures. Thus the conical whisker structure is adaptive for sensor mobility in constrained environments and in feature extraction during active haptic exploration of objects and surfaces. We show that the quasi-static can accurately predict the whisker shape and the input to the whisker system during contact with objects, but not after detach.
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