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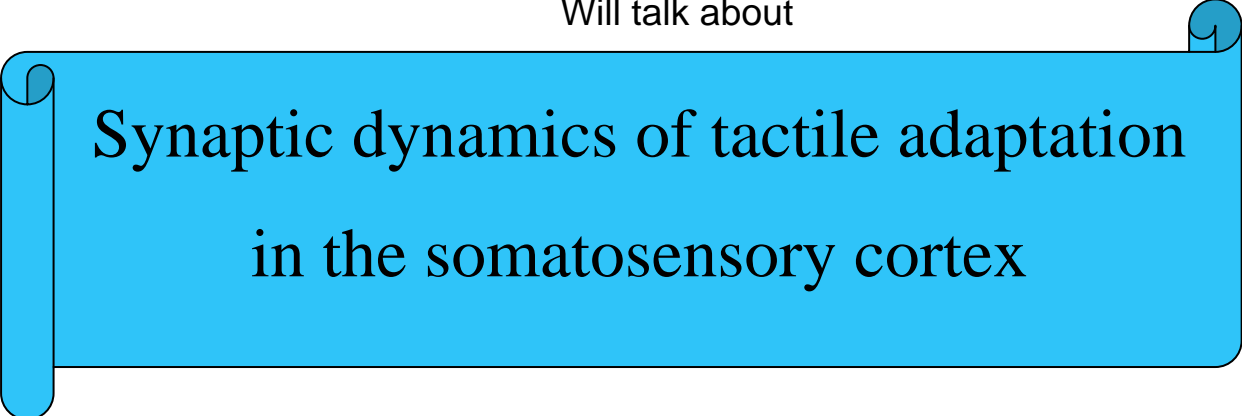
On Monday, February 21st 2011, 10:15

Prof. Ilan Lampl

Department of Neurobiology

Weizmann Institute

Will talk about



**Synaptic dynamics of tactile adaptation
in the somatosensory cortex**

Host: Dr. Shlomo Wagner

Place: Hall 101, Student House

Abstract

Adaptation is a fundamental property present in all sensory systems, and is thought to serve several important roles in sensory processing. In recent years we have studied the adaptation properties of neurons in the somatosensory system

using repetitive whisker stimulation in anesthetized rats and uncovered two fundamental principles. In one study we show that inhibitory inputs of cortical layer 4 neurons adapt more than excitatory inputs, causing a drastic change in the balance between these inputs. In the second study we studied the dependency of adaptation on stimulus intensity. We showed that cortical adaptation is stronger for weak input. This behavior stands in contrast to short term synaptic depression models and interestingly that this process results from low level processing of sensory inputs at the brainstem. The role of intensity dependent adaptation is unclear but it may attenuate weak and perhaps irrelevant stimuli already at a low level of sensory processing.