ELSC-ICNC Seminar: Tim Gollisch

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A closer look at receptive fields: How neurons in the retina integrate visual signals

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On the topic of:

A closer look at receptive fields: How neurons in the retina integrate visual signals
ELSC-ICNC lecture hall (Silverman Bldg., Wing 3, 6th floor - Edmond J. Safra Campus)

April 07, 2011, at 17:00

Abstract:

The vertebrate retina encodes incoming visual stimuli into spike patterns of its output neurons, the retinal ganglion cells. Signal processing by ganglion cells is traditionally characterized through the cells? receptive fields, which exhibit the well-known center-surround structure. Often, however, it is the nonlinear substructure within the receptive fields that gives certain ganglion cells their specific functions. In this talk, I will therefore present some new tools and ideas for studying the substructure of receptive fields. We have used online analysis and closed-loop experiments to study how ganglion cells combined inputs from different parts of their receptive fields. And we have used a new stimulus design to study whether certain types of adaptation are local or global properties of the receptive fields.
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