The functionalorganization of cortical feedback connections

Leopoldo Petreanu
Champalimaud, Portugal

Theories of hierarchical cortical computation make explicit or implicitpredictions on how the diverse signalsrelayed by feedback projections should relate to the functionalproperties of theirpostsynaptictargets. In visual cortex thisimpliesrelating the tuningproperties of feedback axons with the retinotopic location theytarget in lowervisual areas. However, itisunclear to whatextent the retinotopicspecificity of feedback projections istuning-dependent. I willbediscussingrecentexperiments in mouse primaryvisual cortex (V1) measuring the retinotopicspecificity of functionally-characterized feedback inputs fromhigherordervisual areas. Wefind an elegantorganizationwhere the tuning of feedback inputs to visual stimuli islinked to the regionstheytarget in V1’s retinotopicrepresentation.