

Studying visual system plasticity with mesoscopic brain imaging in developing and adult cats

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Understanding the mechanisms of neural circuit plasticity in the adult brain may play a key role in the treatment of neurological disorders. Short-term monocular deprivation represents a tractable plasticity model in adult subjects. However, the neural mechanisms underlying this phenomenon are not yet fully understood. To investigate the mechanisms of adult plasticity in a short-term deprivation context, we developed a functional ultrasound imaging framework. We record from anesthetized, head-fixed and from awake cats without head fixation to investigate the mapping of visual features onto cortical visual areas during behavior. Our preliminary data demonstrate that fast functional ultrasound imaging provides the right experimental tool for studying adult plasticity.

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