Evoked vs. induced activities
time-frequency analysis

Induced beta/gamma oscillations
at different recording levels

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Human intracranial recordings - Visual memory - Long-distance synchrony

lateral occipital sulcus

fusiform gyrus

visual memory task

S1 delay S2

memory condition

local gamma
during encoding

long-distance
beta synchrony
during memory

cross-channel phase-synchrony
(randomization statistics)
Human intracranial recordings – Auditory attention – Short-distance synchrony

- **40-80Hz**
  - **ON** and **OFF** states
  - **evoked** and **induced** responses

- **25-30Hz**
  - **evoked** and **induced** responses

**Multiple high- and low-gamma foci**

**Phase-synchrony**

- **30Hz**
  - **target tone** and **standard tone**

**Low-gamma synchrony for attended tones**
Human intracranial recordings – Auditory attention – Beta/gamma time-courses

Planum temporale

- **Gamma** (24-42 Hz)
- **Beta** (12-18 Hz)

**Gamma increase and beta decrease**

**Multiple beta desynchronizations**

- 17 Hz
- 15 Hz
- 12 Hz
Beta/gamma oscillations: from intracranial to scalp recordings

**Visual memory**

- **LOS**
- **Fusiform**
- **scalp EEG**

**Auditory attention**

- **MEG (Hall, 2004)**
- **intracranial EEG**

- **transient gamma**

- **sustained gamma**

- **25 Hz**
- **30 Hz**

- **synchrony**