

Spring 2022

Meetings: Tuesdays, 10.00 am

Location: Jerome L Greene Science Center, Room L7-119

For the zoom link contact re2365@columbia.edu

Schedule:

Methods for decoding and interpreting neural data

- Feb 01 *Methods on calculating receptive fields* (Ji Xia) [Material](#)
- Feb 08 *Information theory* (Jeff Johnston)
- Feb 15 *cancelled*

Neural representations

- Feb 22 *Geometry of abstractions* (theory session) (Valeria Fascianelli) [slides](#)
- Mar 01 *Geometry of abstractions* (hands-on session) (Lorenzo Posani)

Network dynamics

- Mar 08 *Solving very nonlinear problems with Homotopy Analysis Method* (Serena Di Santo) [notes](#) [notebook](#)
- Mar 29 *Forgetting in attractor networks* (Samuel Muscinelli)
- Apr 05 *Mean-field models of network dynamics* (Alessandro Sanzeni + Mario Dipoppa)

Dynamics of learning

- Apr 12 *Learning dynamics in feedforward neural networks* (Manuel Beiran + Rainer Engelken)

- Apr 19 *Learning dynamics recurrent neural networks* (Manuel Beiran + Rainer Engelken)

Causality

- Apr 26 *Introduction to some causality issues in neuroscience* (Laureline Logiaco)
- May 3 *Causality and latent variable models* (Josh Glaser)
- May 10 *student presentations*
- May 17 Bonus session: *Many methods, one problem: modern inference techniques as applied to linear regression* (Juri Minxha)