

INTERNATIONAL CONFERENCE ON MATHEMATICAL NEUROSCIENCE (ICMNS)

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Provide an interdisciplinary event to bring together theoretical neuroscientists and mathematicians

Motivations from:

- ▶ **Modelling questions** concerning brain (dis)function.
- ▶ **Mathematical insight** into neuroscience

⇒ Biological questions requiring the development of new pieces of mathematics.

⇒ To help getting the first theory of neuroscience!

Several examples in illuminating models

- ▶ synaptic plasticity (Hebb),
- ▶ visual motion computation (Hassenstein Reichardt)
- ▶ the efficiency of sensory codes (Barlow)
- ▶ the role of inference and priors in perception (Helmholtz)

This relies on (formal) models, statistics, data mining... conceptualization, testing...

For modelling:

- ▶ ratio biological details / mathematical parsimony
- ▶ bridging the scales
- ▶ developing time models, spatially-extended models, stochastic models (links between these different paradigms)

- ▶ Poster awards.
- ▶ Reviews.

"I have never heard of such a mathematician, he is actually a physicist", *Landau on Poincaré*.