

B I - C O M A T H E M A T I C S C O L L O Q U I U M

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“Canonical Forms of Neural Ideals”

Monday, September 18, 2023

Talk at 4:30 PM – Park 338

Reception at 4:15 PM – Park 361, Math Lounge

Abstract:

The neural ideal was introduced by Curto, Itskov, et al in 2013 to study the firing patterns of a set of neurons (called a neural code), turning problems in neuroscience and coding theory into algebraic questions. They also introduced the canonical form of a neural ideal, a set of generators uniquely tied to the original neural code. In this talk I will give an overview of neural ideals, describe a simple criterion for determining whether a neural ideal is in canonical form, and give an improved algorithm for computing the canonical form of a neural ideal. This work is joint with Hugh Geller.

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