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**Sema Güntürkün, Jack Jeffries\*** (jackjeff@umich.edu) and **Jeffrey Sun.** *Polarization of Neural Rings.*

Neural rings, as introduced by Curto, Itskov, Veliz-Cuba, and Youngs, are a useful algebraic tool for organizing the combinatorial information of which neurons can together. However, they are neither graded nor local, and consequently, many algebraic approaches to understanding such rings fail.

In this talk, we will discuss a technique called polarization that associates to a neural ring another ring that is graded and that is closely related to the original. This method is motivated by the notion of polarization of monomial ideals. We will also discuss some applications of this method to understanding the algebra of neural rings as well as the combinatorics of codes.

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