

Abstract Submitted
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Beyond Critical Exponents in Neuronal Avalanches NIR FRIEDMAN, Department of Physics, University of Illinois at Urbana-Champaign, TOM BUTLER, Massachusetts Institute of Technology, ROBERT DEVILLE, Department of Mathematics, University of Illinois at Urbana-Champaign, JOHN BEGGS, University of Indiana, KARIN DAHMEN, Department of Physics, University of Illinois at Urbana-Champaign — Neurons form a complex network in the brain, where they interact with one another by firing electrical signals. Neurons firing can trigger other neurons to fire, potentially causing avalanches of activity in the network. In many cases these avalanches have been found to be scale independent, similar to critical phenomena in diverse systems such as magnets and earthquakes. We discuss models for neuronal activity that allow for the extraction of testable, statistical predictions. We compare these models to experimental results, and go beyond critical exponents.

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