

## Self-Organized Criticality of Neural Avalanche in a Neural Model on Complex Networks

Nam Jung<sup>1</sup> and Le Anh Quang<sup>1</sup> and Seung Eun Maeng<sup>1</sup> and Tae Ho Lee<sup>1</sup> and Jae Woo Lee<sup>1</sup>

<sup>1</sup> Department of Physics, Inha University, Namgu, Incheon 22212, Korea

Avalanche size distribution of neural signals from a variety of neural model represents the Power Law. In LHG Model<sup>†</sup> which kind of Integrate-Firing Model, neural firing signals distribution exhibited a self-organized criticality. Critical exponent of the neural firing signal distribution in a fully connected neural network showed a value near 1.5. Self-organized criticality of LHG model were confirmed by computer simulations when the connection of neurons have a complex network structure. confirm how changed critical exponent of neural firing signal distribution depending on Depending on the structure of complex network.

<sup>†</sup> Levina A and Herrmann JM and Geisel T, Nat Phys 2007, 3:857-860.