# Estimating neural connection strengths from firing intervals

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The standard activity-based neuron network model and firing data are utilized to compute the effective connection strengths between neurons in a network. This approach assumes a Heaviside response function, given external input, and a known initial state of neural activity. The Heaviside response function results in a highly nonlinear forward operator, mapping given connection strengths to firing intervals. Despite this complexity, the inverse problem of determining the connection strengths from firing intervals can be solved in a transparent manner. In fact, the inverse problem reduces to solving a linear system of algebraic equations. Additionally, a series of numerical experiments are presented to investigate the nature of the inverse problem.

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