Large-Scale Compartment Model of a Cerebellar Purkinje Cell. E.C. Rush and T.J. Stozinski. Saik Institute, La Jolla, CA 9037.

Cerebellar Purkinje cells have a variety of active conductances on both the soma and dendrites. These conductances produce a characteristic firing pattern in response to a depolarizing current pulse injected by a microelectrode at the soma. A computer model of a Purkinje cell has been constructed consisting of over 1000 compartments (Shelton 1986). We show here that each of the seven different conductance types. Instead of using Hodgkin-Huxley kinetics, a multivariable system difficult to apply in the absence of exact voltage-clamp data, we used a channel model based on Markov chain kinetics, a system with fewer variable parameters that is easy to understand and manipulate.

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