Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Maximum Caliber Analysis of Ion-Channel Gating ROY CAMPBELL, Walla Walla University — The principle of maximum caliber, MaxCal, is a generalization to nonequilibrium statistical mechanics of the principle of maximum entropy, MaxEnt. E. T. Jaynes introduced the MaxEnt approach to equilibrium statistical mechanics in 1957 and its MaxCal generalization in 1980. MaxCal has recently been used to derive dynamical laws of transport, analyze single particle two-state dynamics, and study few state models of non-equilibrium processes. We use MaxCal to analyze ion-channel gating data and make logical inferences concerning the underlying dynamics. The inferred trajectory probabilities are used to calculate the fluctuations responsible for channel noise.

Roy Campbell
Walla Walla University

Date submitted: 19 Nov 2010 Electronic form version 1.4