Abstract Submitted
for the 4CF07 Meeting of
The American Physical Society

A rapid, objective method for detection of non-uniform steps in noisy signals. BENNETT KALAFUT, KOEN VISSCHER, University of Arizona — Biophysical techniques, such as single molecule FRET, fluorescence microscopy, single ion-channel patch clamping, and optical tweezers often yield data that are noisy time series containing discrete steps. Here we present a method, based on the Schwarz Information Criterion, enabling objective identification of nonuniform steps present in such noisy data. Our method requires no assumption of underlying kinetic or state models and is hence particularly useful in the analysis of novel or poorly understood systems.

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Date submitted: 14 Sep 2007 Electronic form version 1.4