1056-62-1452   **Jeff Hamrick*** (`hamrickj@rhodes.edu`), 2000 N. Parkway, Memphis, TN 38104, and **Yifei Huang**, **Kostas Kardaras** and **Murad S Taqqu**. *Computing a Penalized Maximum Quasi-Likelihood Estimator of the Diffusion Coefficient.*

We consider a class of diffusion models with deterministic coefficient functions that are allowed to depend on the level of the diffusion. We develop a nonparametric estimation procedure for the diffusion coefficient based on a penalized maximum quasi-likelihood method. After discussing the challenges associated with computation of this estimator and implementing the technique on several simulated and real-world sets of data, we discuss the rate of convergence of this estimator. (Received September 21, 2009)