1116-VP-2693 **Steve S. Chung*** (schung@csufresno.edu), Department of Mathematics, CSU Fresno, Peters Business Bldg., Rm 341, 5245 N. Backer Ave. M/S PB108, Fresno, CA 93740, and **Xu-Feng Niu**.
Semiparametric models for financial volatility. Preliminary report.

We propose a semiparametric method for modeling the autoregressive conditional heteroscedasticity for prediction of volatility in financial time series. With the generalized autoregressive conditional heteroscedasticity (GARCH) as an initial parametric estimate, we update the model based on bivariate Bernstein basis polynomials by using the functional gradient descent (FGD) algorithm with a normal likelihood loss function. We evaluate the model through simulated and real data. The results demonstrate its strong predictive potential for financial volatility. (Received September 22, 2015)