1106-VL-1912 **Wei Cui*** (wcui@crimson.ua.edu) and **Zhijian Wu** (zhijian.wu@xjtlu.edu.cn). *Fractional Brownian Motion and Hedging with Short-term Futures Contracts.* Preliminary report.

Assuming the market model is driving by the fractional Brownian motion (fBm), we study the following optimization problem:

Under the constraint that $F_g(1) \leq x$. Which measurable function $g : [0,1] \to R[0,1]$ will minimize the value $\sup_{t\in[0,1]} F_g(t)$, where $F_g(t) = H(2H-1)\int_0^t \int_0^t \big(t-g(u)\big)\big(t-g(v)\big)|u-v|^{2H-2}dudv$, and $H \in (\frac{1}{2}, 1)$. This problem is related to hedge a long-term supply commitment with short-term futures contracts under a certain constraint on the terminal risk. In this talk, we will show that a unique solution to this problem always exists. (Received September 15, 2014)