

October 26th, 2015

KAP 414

2:00 P.M. – 3:00 P.M.

Professor Knut Solna

(University of California, Irvine)

**“Correction to Black-Scholes Formula Due to
Fractional Stochastic Volatility”**

Abstract: Empirical studies show that the volatility may exhibit correlations that decay as a fractional power of the time offset. The paper presents a rigorous analysis for the case when the stationary stochastic volatility model is constructed in terms of a fractional Ornstein Uhlenbeck process to have such correlations. It is shown how the associated implied volatility has a term structure that is a function of maturity to a fractional power.