

1159-60-10

**Michael J Roberts\***, 1126 College St N, 203, Fargo, ND 58102. *Application of sequential jump hypothesis testing to oil prices.*

In this presentation, a sequential hypothesis test for the detection of general jump size distribution is investigated. Infinitesimal generators for the corresponding log-likelihood ratios are presented and analyzed. Bounds for infinitesimal generators in terms of super-solutions and sub-solutions are computed. This is shown to be implementable in relation to various classification problems for a crude oil price data set. Machine and deep learning algorithms are implemented to extract a specific deterministic component from the crude oil data set, and the deterministic component is implemented to improve the Barndorff-Nielsen and Shephard model, a commonly used stochastic model for derivative and commodity market analysis. (Received May 24, 2020)