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**Andreas Basse-O'Connor** and **Jan Rosinski\*** ([rosinski@math.utk.edu](mailto:rosinski@math.utk.edu)), Department of Mathematics, University of Tennessee, Knoxville, TN 37996. *On infinitely divisible semimartingales.*

The objective of this work is to extend Stricker's theorem, which gives a characterization of a Gaussian process to be a semimartingale in its natural filtration, to non Gaussian infinitely divisible processes. The motivation comes from modeling, where non Gaussian long memory processes with possible jumps and high volatility are considered as driving motion for stochastic differential equations. We show that the problem when such a process is a semimartingale can often be reduced to a path property, when a certain associated infinitely divisible process is of finite variation. This gives the key to characterize the semimartingale property for many processes of interest, including linear fractional processes, moving averages, supOU processes, and more generally, Volterra processes driven by Lévy processes. (Received January 31, 2015)