

Time Change, Volatility, and Turbulence

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Abstract

A concept of Volatility Modulated Volterra Processes is introduced. Apart from some brief discussion of generalities, the paper focusses on the special case of backward moving average processes driven by Brownian motion. In this framework, a review is given of some recent modelling of turbulent velocities and associated questions of time change and universality. A discussion of similarities and differences to the dynamics of financial price processes is included.