### **Seminar of Probability and Stochastic Process**

Tuesday, 15th November, from 16h15 <u>MA A1 12</u>, EPFL, Ecublens

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# Volatility estimation for stochastic PDEs and related processes.

## **Abstract:**

The limit theory of realized power variations is well studied for processes like semimartingales or stationary moving averages. By contrast, apart from very particular examples, there has been no systematic analysis of realized power variations for tempo-spatial processes such as stochastic PDEs. In this talk, we discuss work in progress about a law of large numbers for the realized power variations of stochastic PDEs and related processes. In particular, we show that the limiting power variations heavily depend on whether the underlying equation is, for example, of parabolic or hyperbolic type. From a statistical point of view, this amounts to the consistent estimation of the integrated effective volatility process based on high-frequency observations.

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