



## Probability Session

### The Universal Space, Independence and the Wiener-Lévy-Ciesielski Construction of the Brownian Motion.

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Wednesday, February 07, 2024.  
16h30 - 17h10

Math Department- Room B

#### Abstract.

In this expository lecture we show how to construct a countable infinite sequence of independent univariate Gaussian random variables on the Universal Space. Afterwards, we use this sequence to construct a simple (separable) Hilbert space supporting the Wiener-Lévy-Ciesielski Construction of the Brownian Motion. At the end we will briefly comment on how to apply the presented ideas to construct a Gaussian Processes with a prescribed Hölder covariance function not requiring at any step the use of the Kolmogorov Existence theorem.