

# The functional Breuer-Major theorem

Ivan Nourdin

Let  $X_k$  be a centered stationary Gaussian sequence with unit variance and autocorrelation  $\rho$ . Let  $f$  be a measurable function so that  $f(X_1)$  is centered and square integrable. Finally, let  $d \geq 1$  denote the Hermite rank of  $f$ , that is, the order of the first non-zero element in the expansion of  $f$  in Hermite polynomials. The Breuer-Major theorem asserts that, if  $\rho$  is  $d$ -integrable, then  $(f(X_1) + \dots + f(X_n))/\sqrt{n}$  becomes approximately gaussian when  $n$  goes to infinity. In this talk, I will prove a functional version of the Breuer-Major theorem in the Skorohod space of càdlàg functions. This is joint work with David Nualart (Kansas).