Boston University Statistics and Probability Seminar Series

Invariance principle for homogeneous sums: universality of Wiener chaos

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Mathematics and Computer Science (MCS) Building, Room 149

111 Cummington Street, Boston

Tea and Cookies at 3:30pm in MCS 153

Abstract: Let $X_1, X_2, ...$ denote any sequence of centered independent random variables with unitary variance, and verifying moreover that there exists q¿2 such that the qth (absolute) moment of X_i is uniformly bounded. Fix an integer d¿1, and let $Q_d(n, X)$ denote the sum, for $i_1, ..., i_d$ from 1 to n, of $f_n(i_1, ..., i_d)X_{i_1}...X_{i_d}$. Here, $f_n : 1, ..., n^d \to R$ denotes a symmetric function, vanishing on diagonals and normalized in such a way that $d!|f_n|^2 = 1$. During my talk, I will show the following invariance principle: "If $Q_d(n, G)$ converges in law to N(0,1) then $Q_d(n, X)$ converges in law to N(0,1) for all sequences X as above."

This talk is based on a work in progress with Giovanni Peccati (Paris Ouest) and Gesine Reinert (Oxford)

For directions and maps, please see *http://math.bu.edu/research/statistics/statseminar.html.*