

PSEUDOPROCESSES AND CIRCULAR PSEUDOPROCESSES

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In this talk we give a probabilistic representation of fundamental solutions to higher-order heat-type equations which represent the transition function of pseudoprocesses (with sign-varying behaviour). The compositions of pseudoprocesses X_n with stable, positively-skewed r.v.'s of order $1/n$, independent from X_n produce Cauchy-distributed r.v.'s. By wrapping up the pseudoprocesses X_n on the unit-radius circle we obtain circular pseudoprocesses Θ_n which can be regarded as generalizations of circular Brownian motion. We give the Fourier representation of the distribution of Θ_{2n} (even-order case). The composition of Θ_n with stable positively-skewed r.v.'s of order $1/n$ gives the Poisson kernel of which a probabilistic interpretation can be given.

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