



Minisymposium 7 - Stochastic algorithms and Markov processes

Coalescent tree based functional representations for some Feynman-Kac particle models

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We present tree based functional representations of a class of Feynman-Kac particle distributions, including an extension of the Wick product formula for interacting particle systems on coalescent forests. These weak expansions rely on an original combinatorial, and permutation group analysis on a special class of coalescent, and colored forests. We also show that these polynomial type representations provide non asymptotic and sharp propagation of chaos type properties, as well as sharp L^p -mean error bounds, and laws of large numbers for U-statistics.