

Consequences and applications of the Fock space representation theorem

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Abstract

In this thesis, we deal with selected applications of the Fock space representation theorem. One of the most important is the covariance identity, which can yield in an estimation of the correlation function of a point process having Papangelou conditional intensity. We used this result to generalise some asymptotic results for Gibbs particle processes. Namely, in combination with Stein's method, we derived bounds for the Wasserstein distance between the standard normal distribution and the distribution of an innovation of a Gibbs particle process. As an application, we present a central limit theorem for a functional of a Gibbs segment process with pair potential.