



قطب علمی
سیستم‌های پیچیده
و ماده چگال



سمینار هفتگی ماده چگال نرم

Irreversible Monte Carlo Algorithms

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Irreversible Monte-Carlo algorithms can be more efficient than traditional reversible ones such as Metropolis-Hasting. Traditional algorithms are using the Detailed Balance condition. It is known that this strict condition is sufficient but not necessary for equilibrium of Monte-Carlo. One can change this condition to make much more efficient algorithms.

In this seminar first we start with an introduction about classical Monte-Carlo algorithms and the Detailed Balance condition. Then we will talk about the equilibrium condition, the most efficient algorithm, and the computational problems. Finally, new method which is offered in the below paper* will be studied. One numerical example is used to show that how much the algorithm can be more efficient than traditional one.

* *Konstantin S. Turitsyn, Michael Chertkov, Marija Vucelja, "Irreversible Monte Carlo Algorithms for Efficient Sampling", Arxiv preprint arXiv:0809.0916, 2008.*

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