

# 凝縮系物理学ゼミナール

日時：10月10日（水）15：00～

場所：理学部5号館 413号室

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## 「Diagrammatic Monte Carlo simulation of quantum impurity models」

Quantum impurity models play an important role as representations of molecular conductors and in the “dynamical mean field” method, currently one of the most promising tools for studying the physics of fermionic lattice models. Despite their zero-dimensional nature, the numerical simulation of impurity models remains a challenging task. Progress has been achieved with the recent development of diagrammatic Monte Carlo techniques. This simulation approach relies on a diagrammatic expansion of the partition function and the stochastic sampling of collections of diagrams. I will explain the key ideas for the diagrammatic method and illustrate its power and flexibility with dynamical mean field results for single-band and multi-orbital models. I will also discuss the adaptation of the diagrammatic Monte Carlo technique to real-time dynamics in non-equilibrium systems.