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Bold-line Monte Carlo and the nonequilibrium physics of strongly correlated many-body systems

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This talk summarizes real time bold-line diagrammatic Monte-Carlo approaches to quantum impurity models, which make significant headway against the sign problem by summing over corrections to self-consistent diagrammatic expansions rather than a bare diagrammatic series. When the bold-line method is combined with reduced dynamics techniques both local single-time properties and two time correlators such as Green functions can be computed at very long timescales, enabling studies of nonequilibrium steady state behavior of quantum impurity models and creating new solvers for nonequilibrium dynamical mean field theory.

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