

MULTILEVEL POLICY ITERATION FOR PRICING AMERICAN OPTIONS

Marcel Ladkau

Weierstrass Institute for Applied Analysis and Stochastics, Berlin

In this talk we propose a multilevel simulation based approach for computing lower bounds of American options. By constructing a sequence of Monte Carlo based policy iterations due different levels of accuracy we construct a multilevel version of policy iteration with significantly improved complexity. In this context, we will present new convergence results regarding the bias and variance of simulation based Howard iteration and show that the multilevel complexity is superior to the standard one.

This is joint work with Denis Belomestny and John Schoenmakers.