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A scheme for Hamilton-Jacobi-Bellman equations with oblique boundary conditions

lundi 1 juillet 2024 11:00 (45 minutes)

In this talk we consider a fully-discrete semi-Lagrangian approximation of second order possibly degenerate Hamilton-Jacobi-Bellman (HJB) equations on a bounded domain with oblique boundary conditions. These equations appear naturally in the study of optimal control of diffusion processes with oblique reflection at the boundary of the domain.
The proposed scheme is shown to satisfy a consistency type property, it is monotone and stable. Our main result is the convergence of the numerical solution towards the unique viscosity solution of the HJB equation.

Based on a joint work with E. Calzola, E. Carlini and X. Dupuis.

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