A Stochastic Differential Game for the Inhomogeneous ∞-Laplace Equation

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Abstract: A two-player zero-sum stochastic differential game (SDG), defined in terms of an m-dimensional state process that is driven by a one-dimensional Brownian motion, played until the state exits the domain, is studied. The players controls enter in a diffusion coefficient and in an unbounded drift coefficient of the state process. We show that the game has value, and characterize the value function as the unique viscosity solution of an inhomogeneous infinity Laplace equation. Joint work with Rami Atar.

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