Financial Mathematics

Stochastic differential games with inside information

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We discuss stochastic differential games of jump diffusions, where the play-ers have access to inside information, possibly asymmetric. Our approach is based on anticipative stochastic calculus, white noise, Hida-Malliavin calcu-lus, forward integrals and the Donsker delta functional. We obtain a char-acterization of Nash equilibria of such games in terms of the corresponding Hamiltonians. This is used to study applications to insider games in finance, specifically optimal insider consumption and optimal insider portfolio under model uncertainty.

The presentation is based on joint works with Olfa Draouil (Tunis).