

April 22, 2024
2:00pm-3:00pm
KAP 414

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Insider trading with penalties, entropy and quadratic BSDEs

Abstract: Kyle model in continuous time where the insider may be subject to legal penalties is considered. The equilibrium is characterized via a backward stochastic differential equation (BSDE) whose terminal condition is determined as the fixed point of a non-linear operator in equilibrium. In particular, the solution reveals an interesting connection between h-transformations and quadratic BSDEs.

The model finds that the insiders trade the same constant multiple of the difference between their private signal and their expectation of the market price right before the private information becomes public, which is in agreement with the recent empirical studies on insider trading. Moreover, the model is applied to the optimization problem of a regulator with the objective of deterring insider trading while ensuring that the prices are informationally efficient. It is shown that the optimal penalty policy is reduced to choosing from one of two extremal penalty levels that correspond to high and low liquidity regimes. The optimal choice is then determined by the amount of noise trading and the relative importance of price informativeness.

Zoom Link: USC Math Finance Colloquium

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