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Stochastic impulse control on optimal execution with price impact and transaction cost

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We study a single risky financial asset model subject to price impact and transaction cost over an finite time horizon. An investor needs to execute a long position in the asset affecting the price of the asset and possibly incurring in fixed transaction cost. The objective is to maximize the discounted revenue obtained by this transaction. This problem is formulated as an impulse control problem and we characterize the value function using the viscosity solutions framework. We establish an associated optimal stopping problem that provides bounds and in some cases the solution of the value function.

Subjects: **Trading and Market Microstructure (q-fin.TR)**; Analysis of PDEs (math.AP)

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