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Libor Pospisil* (lp2185@columbia.edu), 1255 Amsterdam Avenue, New York, NY 10027, and
Jan Vecer, 1255 Amsterdam Avenue, New York, NY 10027. *Maximum Drawdown of a
Jump-Diffusion Process and the Corresponding Partial Integro-Differential Equations.*

In this talk, we introduce the maximum drawdown as a tool for measuring market crashes – drops in the price of an asset. Moreover, contracts with payoffs depending on the realized maximum drawdown can serve as insurance against market crashes. Our main goal is to develop a method for pricing these types of contracts under the assumption that the price of the asset is a diffusion process plus a compound Poisson process. Given the complexity of the underlying model, the most suitable method is derivation of the pricing partial integro-differential equation and solving it numerically. The special feature of the equations is the presence of the running maximum and the running maximum drawdown, which may be discontinuous due to the jumps in the asset price. We will also discuss properties of the numerical solution. (Received March 29, 2010)