

Mild to classical solutions for XVA equations under stochastic volatility

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Abstract

We extend the valuation of contingent claims in presence of default, collateral and funding to a random functional setting and characterise pre-default value processes by martingales. Pre-default value semimartingales can also be described by BSDEs with random path-dependent coefficients and martingales as drivers. En route, we generalise previous settings by relaxing conditions on the available market information, allowing for an arbitrary default-free filtration and constructing a broad class of default times. Moreover, under stochastic volatility, we characterise pre-default value processes via mild solutions to parabolic semilinear PDEs and give sufficient conditions for mild solutions to exist uniquely and to be classical.