Svetlana Boyarchenko* (sboyarch@eco.utexas.edu) and Sergei Levendorskii. Barrier Options, CDS and Quanto CDS in Lévy Models with Stochastic Interest Rate.

Recently, advantages of conformal deformations of the contours of integration in pricing formulas for European options have been demonstrated in the context of wide classes of Lévy models, the Heston model and other affine models. Similar deformations were used in one-factor Lévy models, where the Wiener-Hopf factorization is applicable, to price options with barrier and lookback features and CDSs. In the present paper, we generalize this approach to models of structural default with the stochastic interest rate, and design an algorithm which is almost as fast as in the case of the constant interest rate. Similar results are obtained for quanto CDS, where an additional stochastic factor: the exchange rate is introduced. (Received September 05, 2014)