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We provide and analyse analytical approximations of BSDEs in the limit of small non-linearity and short time to maturity, in the case of non-smooth drivers. We identify the first and the second order approximations within this asymptotics and consider two topical financial applications: the two interest rates problem and the Funding Value Adjustment. In high dimensional diffusion setting, we show how to compute explicitly the first order formula by taking advantage of recent proxy techniques. Numerical tests up to dimension 10 illustrate the efficiency of the numerical schemes. We also show that third order expansions may fail.

Joint work with Stefano Pagliarani (Ecole Polytechnique, France).