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A note on essential smoothness in the Heston model

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This note studies an issue relating to essential smoothness that can arise when the theory of large deviations is applied to a certain option pricing formula in the Heston model. The note identifies a gap, based on this issue, in the proof of Corollary 2.4 in \cite{FordeJacquier10} and describes how to circumvent it. This completes the proof of Corollary 2.4 in \cite{FordeJacquier10} and hence of the main result in \cite{FordeJacquier10}, which describes the limiting behaviour of the implied volatility smile in the Heston model far from maturity.

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