

CONDITIONAL SMALL BALLS, LOCAL CONTINUITY AND QUADRATIC VARIATION

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ABSTRACT

In the classical semimartingale-based option-pricing theory hedging and arbitrage are connected to *Equivalent Martingale Measures*. In the non-semimartingale option-pricing theory those measures do not exist. We propose that *Conditional Small Balls*, *Local Continuity*, and *Quadratic Variation* are the concepts one needs to understand hedging and arbitrage in this more general setup.

In this talk we discuss how hedges follow from Quadratic Variation, and how no-arbitrage follows from Conditional Small Balls and Local Continuity.

The talk is based on the work [1].

References

- [1] Bender, C., Sottinen, T. and Valkeila, E. (2008) Pricing by hedging and no-arbitrage beyond semimartingales *Finance and Stochastics* **29**, 935-945.

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