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Local continuity of stopping times and arbitrage

In this work we extend some of the results in [Bender, Sotinen and Valkeila(08)] to prove the absence of arbitrage in markets driven by non semimartingale models. To this end, we restrict the portfolio strategies to those that depend on locally continuous stopping times relative to a metric structure in the trajectory space. Technically we rely on a non-probabilistic Ito's formula for functions with finite quadratic variation. We discuss some implications of our results and prove absence of arbitrage for non semimartingale models having jumps or stochastic volatility. For the analyzed examples we prove the corresponding small balls properties and the local continuity of the portfolio value under different metrics.