

# Local martingales and the martingale property

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**Timetable:** 12 hrs, first lecture on April 6, 2016, 16:00 (dates already fixed, see the calendar), Torre Archimede, Room 2BC/30.

**Course requirements:** A background in stochastic calculus

**Examination and grading:** Homework problems and an oral presentation (only pass-fail grades are awarded)

**SSD:** MAT/06

**Aim:** Making participants familiar with local martingales and methods to decide on the martingale property.

**Course contents:** Examples for strict local martingales, including local martingales with jumps. How to generate strict local martingales in a systematic way. Review of different methods and their proofs to decide on martingale property; in particular, methods based on weak tails and Novikov-type conditions.

**References to start reading,** *available on <http://www.oxford-man.ox.ac.uk/jruf/>:*

1. Hulley Ruf: Weak tail conditions for local martingales (2015).
2. Blanchet Ruf: A weak convergence criterion for constructing changes of measure, *Stochastic Models* (2015).
3. Ruf: The martingale property in the context of stochastic differential equations, *Electronic Communications in Probability*, Volume 20, Issue 34 (2015).