

TOWARDS A GENERAL DOOB-MEYER DECOMPOSITION THEOREM

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Abstract: Both the Doob-Meyer and Graversen-Rao decomposition theorems can be proved following an approach based on predictable compensators of discretizations and weak- L^1 technique, which was developed by K. M. Rao. It is shown that any decomposition obtained by Rao's method gives predictability of compensators without additional assumptions (like submartingality in the original Doob-Meyer theorem or finite energy in the Graversen-Rao theorem).

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Key words and phrases: Doob-Meyer decomposition theorem, predictable compensator, processes with finite energy, martingales.

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