Mathematics > Probability

Some Norm Estimates for Semimartingales

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(Submitted on 20 Jul 2011 (v1), last revised 31 Oct 2012 (this version, v2))

In this paper we introduce a new type of norms for semimartingales, under both linear and nonlinear expectations. Our norm is defined in the spirit of quasimartingales, and it characterizes square integrable semimartingales. This work is motivated by our study of zero-sum stochastic differential games \cite{PZ}, whose value process is conjectured to be a semimartingale under a class of probability measures. As a by product, we establish some a priori estimates for doubly reflected BSDEs without imposing the Mokobodski's condition directly.

Comments:	33 pages
Subjects:	**Probability (math.PR)**
MSC classes:	60H10, 60H30
Cite as:	**arXiv:1107.4020 [math.PR]**
	(or **arXiv:1107.4020v2 [math.PR]** for this version)

Submission history

From: Jianfeng Zhang [view email]

[v1] Wed, 20 Jul 2011 16:07:16 GMT (19kb)

[v2] Wed, 31 Oct 2012 06:10:18 GMT (22kb)