

# Application of semimartingale measure to the investigation different types of stochastic inclusions.

Joachim Syga

## Streszczenie

A measure for a semimartingale is introduced. It is used to investigate properties of the solution set of stochastic inclusions different types.

## Literatura

- [1] K.K. Aase, P. Guttrup, Estimation in models for security prices, *Scand. Actuarial J.*, 3/4:211-225, 1987.
- [2] CHUNG K.L., WILLIAMS R.J., Introduction to stochastic integration, Birkhäuser Boston - Basel - Berlin, 1990.
- [3] DOLÉANS-DADE C., *Existence du processus croissant naturel associé à un potentiel de class (D)*, *Z. Wahr. verw. Geb.*, 9, 309-314, 1968.
- [4] ERRAMI M., RUSSO F., VALLOIS P., *Itô's formula for  $C^{1,\lambda}$ -functions of a càdlàg process and related calculus*, *Probab. Theory Relat. Fields*, 122, 191-221, 2002.
- [5] KISIELEWICZ M., *Differential Inclusions and Optimal Control*, Kluwer Acad. Publ. and Polish Sci. Publ., Warszawa - Dordrecht - Boston - London, 1991.
- [6] MOTYL J., SYGA J., *Properties of set-valued stochastic integrals*, *Disc. Math. Probab. Stat.* 26, 83-103, 2006.
- [7] MOTYL J., SYGA J., *Selection property of Stratonovich set-valued integral*, *Dynamic of Continuous, Discrete and Impulsive Systems* 17 3, 431-443, 2010.

- [8] PROTTER P., Stochastic Integration and Differential Equations, Springer-Verlag, 2nd Edition, Version 2.1, Berlin - Heideberg - New York, 2005.
- [9] SYGA J., Set-valued stochastic integrals driven by a semimartingale and their applications to the theory of stochastic inclusions, PhD-dissertation 2009 (in polish) - not published.
- [10] SYGA J., *Application of semimartingale measure in the investigation of stochastic inclusion*, Dynamic Systems and Applications 21 (2012), 393-406.
- [11] SYGA J., *Note on equivalence of strong solutions to Stratonovich type stochastic inclusion*, in preparation.
- [12] SYGA J., *Semimartingale measure in the investigation of Stratonovich-type stochastic inclusion*, in preparation.

**Afiliacja:** University of Zielona Gora (Uniwersytet Zielonogórski),  
Faculty of Mathematics, Computer Science and Econometrics  
(Wydział Matematyki, Informatyki i Ekonometrii)