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Seminar Announcement

Date: Wednesday, May 2 , 2018

Time: 14:00

Location: Aula Marie Curie, Palazzo D'Ancona, SNS

Title: **Continuous Time Random Walk in finance. The story of symbiosis.**

Speaker: Tomasz Gubiec
(University of Warsaw)

Abstract:

Over 50 years ago, two physicists Montroll and Weiss in the physical context of dispersive transport and diffusion introduced stochastic process, named Continuous-Time Random Walk (CTRW). The trajectory of such a process is created by elementary events 'spatial' jumps of the stochastic process preceded by waiting (or interevent or pausing) time. Since introduction, CTRW found innumerable application in different fields [1]. In this seminar, I will focus on the application of CTRW to finance [2] and I will tell the story of how this application turned out to be fruitful for both sided and motivated new directions of research [3,4].

[1] Kutner, R., & Masoliver, J. (2017). The continuous time random walk, still trendy: fifty-year history, state of art and outlook. *The European Physical Journal B*, 90(3), 50

[2] Scalas, E. (2006). Five years of continuous-time random walks in econophysics. In *The complex networks of economic interactions* (pp. 3-16). Springer, Berlin, Heidelberg.

[3] Gubiec, T., & Kutner, R. (2010). Backward jump continuous-time random walk: An application to market trading. *Physical Review E*, 82(4), 046119

[4] Gubiec, T., & Kutner, R. (2017). Continuous-Time Random Walk with multi-step memory: an application to market dynamics. *The European Physical Journal B*, 90(11), 228