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UNIVERSITÄT
BERN

Philosophisch-
naturwissenschaftliche Fakultät

Departement Mathematik und
Statistik

**Institut für mathematische Statistik
und Versicherungslehre**

Kolloquiumsvortrag in Statistik

Freitag, 24. Februar 2023, 15.15 Uhr

Hörsaal -203, Alpeneggstrasse 22, 3012 Bern

Prof. Dr. Alexandr Marynych, University of Kiev

Title: High-dimensional limits for random walks

We prove limit theorems for random walks with n steps in the d-dimensional Euclidean space as both n and d tend to infinity. If a generic step of such a random walk has uncorrelated components and the second moment of its norm is finite, we show that the trajectory of a random walk, viewed as a random metric space, converges in probability in the Gromov-Hausdorff sense to the deterministic metric space, called Wiener spiral as \$d,n,\to\infty\$. If time permits we shall also discuss the infinite second moment case.

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