

# Seminar on Random Walks in Winter 05/06

## Topics and Speakers

1. Probabilistic and analytic (via transition matrices) definition of a random walk. (Ivan Veselić)
2. – Recurrence, transience and periodicity. (Martin Tautenhahn)  
– Law of large numbers, central limit theorem. (Ivan Veselić)
3. Range of a random walk. (Daniel Lenz).
4. Harmonic analysis, characteristic functions, recurrence criteria. (Daniel Wingert)
5. Recurrent random walk in two dimensions:  
– Generalities, hitting probabilities.  
– Potential kernel & Green's function.  
(No speaker yet)
6. Intermezzo: Potential theory in  $\mathbb{R}^2$ . (Peter Stollmann)
7. Transient random walk:  
– Green's function, hitting probabilities.  
– Random walk in three dimensions with zero mean and finite second moments.

## Contact information

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This document is:

<http://www.tu-chemnitz.de/mathematik/schroedinger/RWtopics.pdf>

The random walks seminar homepage is

<http://www.tu-chemnitz.de/mathematik/schroedinger/RWseminar.pdf>

Please check them occasionally for updates.