RANDOM WALKS IN RANDOM ENVIRONMENT

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A random walk on the set of integers describes a random motion of a particle, initially placed at zero, which always moves one step right with fixed probability p or left with probability 1-p. Thanks to a natural definition and a relatively simple structure, this process for a long time has been used to model numerous random phenomena, e.g. movement of a molecule in a liquid.

In many practical cases some kind of obstacles can appear like impurities, fluctuations, etc. It is natural to model such irregularities as a random environment, which affects behavior of the random walk. Random walks in random environment (RWRE), introduced in the 1970s with two random components: the environment and the movement of the particle is one the most natural objects satisfying the demand of a non-homogeneous medium and for this reason it finds numerous applications in biology, crystallography, physics, etc. The behavior of any RWRE is affected by both randomness of the environment and randomness of the walker.

The goal of this talk is to give a brief introduction to the area of RWRE.