ID de Contribution: **12** Type: **Non spécifié**

The golf model on $\mathbb{Z}/n\mathbb{Z}$ and on $\mathbb{Z}$

jeudi 13 juin 2024 15:10 (30 minutes)

We introduce a particle model, that we call the *golf model*. Initially, on a graph G, balls and holes are placed at random on some distinct vertices. Balls then move one by one, doing a random walk on G, starting from their initial vertex and stopping at the first empty hole they encounter, filling it. On finite graphs, under reasonable assumptions (if there are more holes than balls, and if the Markov chain characterizing the random walks is irreducible) a final configuration is reached almost surely. We are mainly interested in $\mathbf{H}^1$, the set of remaining holes. We give the distribution of $\mathbf{H}^1$ on $\mathbb{Z}/n\mathbb{Z}$, and describe a phase transition on the largest distance between two consecutive holes when the number of remaining holes has order $\sqrt{n}$. We show that the model on $\mathbb{Z}$ is well-defined when every vertex contains either a ball with probability d_{b}, a hole with probability d_{h}, or nothing, independently from the other vertices, as long as $d_{\mathsf{b}} \leq d_{\mathsf{h}}$, and we describe the law of $\mathbf{H}^1$ in this case.

Auteur principal: VARIN, Zoé (Univ. Bordeaux, CNRS, Bordeaux INP, LaBRI, UMR 5800, F-33400 Talence, France)

Orateur: VARIN, Zoé (Univ. Bordeaux, CNRS, Bordeaux INP, LaBRI, UMR 5800, F-33400 Talence, France)