

Mathematics, Physics & Computer Science Seminar Series

20 March 2024, 4:30PM, Meeting room nr. 300, Komenského náměstí 220/2

Bojan Mohar

Random embeddings of graphs in surfaces

Bojan Mohar is a Slovenian and Canadian mathematician whose results in topological and structural graph theory made lasting impact not only in combinatorics but also in theoretical computer science and other fields. Professor Mohar obtained his PhD in 1986 from the University of Ljubljana, and he joined Simon Fraser University as a Canada Research Chair in graph theory in 2005. Professor Mohar has been appointed to be a member of the Slovenian Academy of Engineering in 1999, a SIAM Fellow in 2018, and a Fellow of the American Mathematical Society in 2020. In 2020, he was elected as a Royal Society of Canada Fellow.

Abstract:

Homeomorphism classes of 2-cell embeddings of a graph in orientable surfaces are in bijective correspondence with rotation systems around each vertex of the graph. If we want to include nonorientable surfaces, we also add a signature $\sigma: E(G) \rightarrow \{+1, -1\}$. By taking random local rotations (and a random signature), we can speak about random 2-cell embeddings. The speaker will start with a brief survey of results in the corresponding "Random Topological Graph Theory" and will continue with a discussion on some recent developments.