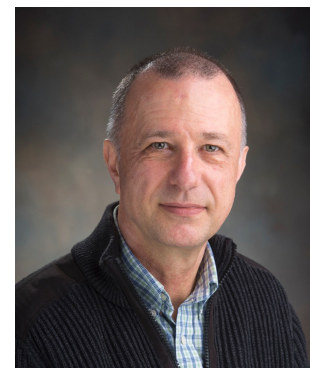# *Can the genus of a graph be approximated?*

Bojan Mohar (Simon Fraser University)

Time: Thursday, July 2nd, 16:00 - 17:00
Zoom meeting ID: 920 274 52557   Password: 121323
Link: https://zoom.com.cn/j/92027452557

Abstract: The genus $g(G)$ of a graph G is defined as the minimum genus of a surface in which G can be embedded (drawn without crossings). Thomassen proved that it is NP-hard to determine whether $g(G) < k$, when the graph G and an integer k are given to us as the input. Robertson and Seymour (and the speaker) proved that this problem is FPT (fixed-parameter tractable). However, it is wide open whether the value of $g(G)$ can be approximated.
The speaker will give an overview of this problem, describe underlying conjectures, and present a complete solution for the case when the graph is dense. The solution uses Szemeredi Regularity Lemma and a result on the genus of quasi-random graphs. This is joint work with Yifan Jing.

About the speaker: Bojan Mohar is the holder of a Canada Research Chair in graph theory at Simon Fraser University and the Editor-in-Chief of Journal of Combinatorial Theory, Series B. Mohar's research concerns topological, algebraic, and structural graph theory. He has been a member of the Slovenian Academy of Engineering, a SIAM Fellow and a Fellow of AMS. In 2010, Mohar received the Institute of Combinatorics and its Applications (ICA) Euler medal, and in 2018 he received the Royal Society of Canada John L. Synge award.