

1116-05-2692      **Michal Kotrbčik\*** (kotrbčik@imada.sdu.dk). *Practical computations in topological graph theory.*

Extensive computations had been part of the topological graph theory for a long time, in particular in attempts to determine the minimum genus of various graphs and graph families. In recent years, the area is experiencing a renewed interest, motivated partly both by vast increase in the available computational resources, as well as by advances in theoretical computer science.

In the first part of the talk I will survey some of the recent results in the area, including both theoretical and practical aspects. The aim is to give an overview of the available methods and their limitations, and should be accessible also to non-specialists.

In the second part of the talk I will present our recent design and implementation of a framework for calculating minimum genus based on ILP and SAT formulations and solvers, focusing mostly on its applicability.

Partly joint work with T. Pisanski, P. Schmidt, respectively S. Beyer, I. Hedtke, and M. Chimani. (Received September 22, 2015)