



The **Vienna School of Mathematics (VSM)** is a joint graduate school of the mathematics faculties of the **University of Vienna** and the **TU Wien**. The VSM is devoted to top-level PhD education in all branches of mathematics. It fosters intra- and interdisciplinary scientific cooperation and networking among students and advisors and aims at increasing the international visibility of the Vienna area as a center for mathematics.

The VSM currently announces a PhD position in the area of

**Discrete geometric structures motivated by applications and architecture
(TU Wien, Supervisor: C. Müller)**

Contemporary architecture of large-scale buildings makes it necessary to subdivide large surfaces which are going to be realized as roofs, facades, etc. into smaller segments, the panels. While the building industry, architects and engineers are understandably mainly interested in design aspects, manufacturing and its statics, we will systematically investigate the following related mathematical structures many of which have been motivated by architecture.

Our focus will lie on discrete structures in sphere geometries. Possible directions are the investigation of various types of nets in the projective models of Lie sphere geometry and thereby particularly focusing on invariant face elements. Furthermore, we are interested in the investigation of subdivision methods in the space of circles and spheres building up on a recent Möbius invariant approach. In this context we aim at a thorough smoothness analysis and the study of possible generalizations in particular to discrete sphere congruences.

The advertised position is associated with the Institute of Discrete Mathematics and Geometry of **TU Wien** in the Research Group on Applied Geometry of Ass.-Prof. Dr. Christian Müller. The successful candidate will become a member of the Vienna School of Mathematics and is expected to actively contribute to its activities. The extent of employment is 30 hours per week. The position will start on November 1, 2020.

Application Requirements and Procedure

The candidates must have a master degree (or equivalent) in Mathematics at the moment the PhD position starts. The application documents should contain a letter of motivation; the scientific CV with publications list; higher education certificates/diplomas; and letter(s) of recommendation. Applications have to be sent to katharina.pauschenwein@tuwien.ac.at. The deadline for applications is **November 6, 2020**.