

CG Week 2014

Workshop on

Triangulations in Geometry and Topology

The proposed workshop will be about *triangulations of manifolds* in computational geometry and topology. More precisely, the main focus will be on computational and combinatorial questions regarding triangulations, with the goal of bringing together researchers working on various aspects of triangulations and of fostering a closer collaboration within the computational geometry and topology community.

Triangulations are highly suitable for computations due to their clear combinatorial structure. As a consequence, they have been successfully employed in discrete algorithms to solve purely theoretical problems in a broad variety of mathematical research areas (knot theory, polytope theory, 2- and 3-manifold topology, geometry, and others).

However, due to the large variety of applications, requirements vary from field to field and thus different types of triangulations, different tools, and different frameworks are used in different areas of research. This is why today closely related research areas are sometimes largely disjoint leaving potential reciprocal benefits unused.

To address these potentials a workshop on Triangulations was held at Oberwolfach Research Institute in 2012. Since then many new collaborations between researchers of different mathematical communities have been established.

Regarding the computational geometry community the situation is similar. Since research about the theory of manifolds continues to contribute to advances in more applied areas of the field, many researchers are interested in fundamental mathematical research about triangulations and thus will benefit from a broad set of knowledge about different research areas using different techniques.

For this reason, we believe that a workshop specifically dedicated to triangulations – a novelty at CG week – will bring together researchers from many different fields of computational geometry to have fruitful discussions leading to new interdisciplinary collaborations and solutions.

We believe that the CG week is the ideal place for this workshop because it is the premier international event in the field with a wide audience and thus with an excellent range and maximum impact within the community.