Workshop on **Asymptotic Geometric Analysis**

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Abstract. Asymptotic Geometric Analysis (AGA) is concerned with geometric properties of finite dimensional objects, especially with the asymptotic behavior of various quantitative parameters as their dimension tends to infinity. Deep geometric, analytic, probabilistic and combinatorial tools have been and are being further developed to study such questions. These tools and results are often of independent interest to the corresponding field, thus creating an interplay between different areas of mathematics such as convex geometry, probability, harmonic analysis and combinatorics. The origin of the field was the 'local theory of Banach spaces', studying infinite dimensional spaces via their finite dimensional sections and quotients.

Results from asymptotic geometric analysis turned out to have applications in computer science, in the theory of metric spaces, in learning theory, and have a direct influence on the fields from which AGA draws its tools - probability, harmonic analysis, combinatorics and convexity. To demonstrate this, the concentration of measure is perhaps the first main tool developed in the theory, to study Dvoretzky type theorems on spherical sections of convex bodies. Over the years it became pertinent to many other branches of mathematics as an efficient tool and useful concept. The distribution of volume on high dimensional convex bodies is another flourishing subject, important open problems like the hyperplane conjecture or equality cases in the inverse Blaschke-Santaló inequality have been solved isomorphically but not isometrically.