

Geometric and Asymptotic Group Theory

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<http://www.mat.univie.ac.at/~dosaj/GGTWien/Course.html>

Dienstag, 11:00–12:00, Seminarraum 8 Oskar-Morgenstern-Platz 1 2.Stock

Blatt 6

CAT(0) cubical complexes

- (1) Show that every simple loop C in a CAT(0) cubical complex X admits a minimal disk diagram $\varphi: (D, C) \rightarrow X$ with at least 3 corners.
- (2) Show that no two vertices on a combinatorial sphere in the 1-skeleton $X^{(1)}$ of a CAT(0) cubical complex X are adjacent.
- (3) Show that a convex subcomplex of a CAT(0) cubical complex is a CAT(0) cubical complex.
- (4) Let $w \in H_{uv}^-$ and $z \in H_{uv}^+$, for an edge wz . Show that $wz \equiv uv$.
- (5) Prove that half-spaces are convex.
- (6) Let X be a locally finite (but not necessarily finite) CAT(0) cubical complex. Show that the intersection of half-spaces containing a given finite subcomplex is a finite subcomplex.