

[Tukia, Pekka](#)

Conical limit points and uniform convergence groups. (English) [Zbl 0909.30034](#)
J. Reine Angew. Math. 501, 71-98 (1998).

The author sorts out the notions required to generalize cocompact and geometrically finite Kleinian groups to the setting of a convergence group G acting on a compact metric space X . The critical terms defined or reviewed or referred to are (1) convergence group (Gehring and Martin), (2) triple space, (3) conical limit point, (4) bounded parabolic point, (5) cusp neighborhood, (6) Gromov hyperbolic group, (7) Gromov boundary, (8) uniform convergence group, (9) cusp-uniform group. The uniform convergence group generalizes the cocompact Kleinian group. The cusp-uniform group generalizes the geometrically finite Kleinian group. The two principal theorems are: Theorem 1A. A convergence group of X is uniform if and only if every non-isolated point of X is a conical limit point. Theorem 1B. A convergence group of X is cusp-uniform if and only if every non-isolated point of X is either a canonical limit point or a bounded parabolic point. Some of the definitions were suggested by Brian Bowditch, who also proved Theorem 1A. Eric Freeden has done related work. (The author gives appropriate references.) Since a uniform convergence group is Gromov hyperbolic (Bowditch) and Gromov hyperbolic group acts as a uniform convergence group on its Gromov boundary (Freeden), Theorem 1A is relevant to the study of Gromov hyperbolic groups.

Reviewer: [J.W.Cannon \(Provo\)](#)

MSC:

[30F40](#) Kleinian groups (aspects of compact Riemann surfaces and uniformization)
[20F65](#) Geometric group theory

Cited in **1** Review
Cited in **20** Documents

Keywords:

[convergence group](#); [Gromov hyperbolic group](#)

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