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Alexey Garber* (alexeygarber@gmail.com). *On the regularity radius for Delone sets in hyperbolic plane.*

Point set X in a metric space \mathcal{M} is called a *Delone set* if its interpoint distance is bounded from below by some positive number and the size of voids in \mathcal{M} is bounded from above by another positive number.

A natural question for Delone sets is whether equal local structure for a set X implies its global symmetry or rich symmetry group. This question originates from an explanation of crystal grow process through local interaction of atoms. For Delone sets in Euclidean spaces this question was in the focus of local theory approach developed by Delone, Dolbilin, Stogrin, and Galiulin in 1970's.

In this talk I review some known results on local theory in Euclidean space as well as give a way to extend them to Delone sets in hyperbolic plane. Particularly, I'll show that there are local conditions on a Delone set X in \mathbb{H}^2 that force X to be regular.

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