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**MISHA BELOLIPETSKY**, IMPA

*Lehmer's problem and triangulations of arithmetic hyperbolic 3-orbifolds*

A triangulation of a hyperbolic orbifold is called good if all the simplices are geodesic and  $l$ -dimensional skeleton of the singular set is contained in the  $l$ -skeleton of the triangulation for every  $l$ . The purpose of the talk is show how the known quantitative results towards Lehmer's problem on the Mahler measure of non-cyclotomic polynomials can be applied to produce good triangulations of arithmetic hyperbolic 3-orbifolds with small number of simplices. More precisely, we show that for any  $\epsilon > 0$ , there is a constant  $V_0 = V_0(\epsilon)$  such that any closed orientable arithmetic hyperbolic 3-orbifold of volume  $V_{hyp} \geq V_0$  has a good triangulation with at most  $V_{hyp}^{1+\epsilon}$  simplices and vertex degree bounded above by an absolute constant.