

Margulis spacetimes, the arc complex, and the Crooked Plane Conjecture I

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Margulis found the first examples of complete affine three-manifolds with free fundamental group. Associated to each of these manifolds, now called Margulis spacetimes, is a non-compact hyperbolic surface and an infinitesimal deformation of that surface which expands the lengths of closed geodesics in a controlled manner. I will describe a basic construction, called infinitesimal strip deformation, which generates all such expanding surface deformations in an essentially unique way. A subsequent talk by F. Kassel will explain how this result proves Drumm and Goldman's Crooked Plane Conjecture for Margulis spacetimes.

(This is joint work with François Guéritaud and Fanny Kassel.)