Dehn surgery construction of Einstein metrics

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Abstract

This talk will describe how many aspects of Thurston's theory of hyperbolic Dehn surgery on 3-manifolds generalize to Einstein metrics in any dimension. For example, given any complete hyperbolic n-manifold N with a non-empty collection of cusp ends, any closed manifold M obtained from N by a "sufficiently large" Dehn filling of the cusp ends carries an Einstein metric, (close to the hyperbolic metric on N). In particular, the construction gives large infinite families of new Einstein metrics on manifolds in all dimensions 4 and above.