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Projective Rigidity of Dehn-Surgery on the Figure Eight Knot

A celebrated result of Thurston states that for all but finitely many relatively prime integers p and q , the (p, q) -Dehn Surgery of the Figure Eight Knot yields a closed hyperbolic manifold. Mostow Rigidity prevents this hyperbolic structure from being deformed in the sense that any two faithful representations of its fundamental group into $\mathrm{PSL}(2, \mathbb{C})$ are conjugate. Identifying $\mathrm{PSL}(2, \mathbb{C})$ with $\mathrm{PSO}(3, 1)$ which sits in the larger projective linear group, $\mathrm{PGL}(4, \mathbb{R})$, we provide evidence that representations of the fundamental group of these surgered manifolds do not admit non-trivial deformations in the larger projective linear group.