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Geometric Topology of 3-manifold

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One of the greatest achievements on mathematics in the 21st century is the proof of the Poincaré's Conjecture by Grigory Perelman in 2003. Indeed, Perelman proved a much stronger result, which is the Geometrization Conjecture proposed by William Thurston in 1982. In order to do so, Perelman used the Ricci flow, a geometric/analytical argument proposed by Richard Hamilton. In this course, thought for a student with some background in Riemannian geometry, we will present Poincaré's conjecture in the context of the geometrization, explain the Geometrization theorem together with the eight Thurston's geometries and give an intuitive overview of the proof of Perelman.