Title:	Geometrics of 3- Manifolds
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Abstract:	The geometrization of closed surfaces has been known for a long time due to Poincare and Koebe. Any closed surface admits a geometry modeled on either of S 2 , R 2 or H 2 depending on its Euler characteristics. However, in dimension 3, there is no finite list of geometries that can geometrize any closed 3-manifold. Instead, in 1982, William Thurston proposed a list of eight geometries. He conjectured that given any compact orientable 3-manifold, one could cut it into pieces (called geometric decomposition) such that each of those pieces admits a geometry modeled on one of those eight. We will investigate the topology of three-dimensional manifolds and describe the process of cutting them into pieces. Furthermore, we will study the topology of those pieces and give a complete de- scription of them. A particular class of 3-manifolds appears in the geometric decomposi- tion, namely, Seifert manifolds. We will give a complete account of the geometrization of Seifert manifolds. The proof of geometrization conjecture requires an entirely different set of techniques and is beyond the scope of this discussion. However, this discussion can an- swer the question - "Why these eight geometries are necessary to geometrize 3-manifolds?".
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