

1. Record Nr.	UNINA9910151929703321
Autore	Bessieres Laurent
Titolo	Geometrisation of 3-Manifolds [[electronic resource] /] Laurent Bessieres, Gerard Besson, Michel Boileau, Sylvain Maillot, Joan Porti
Pubbl/distr/stampa	Zuerich, Switzerland, : European Mathematical Society Publishing House, 2010
ISBN	3-03719-582-7
Descrizione fisica	1 online resource (247 pages)
Collana	EMS Tracts in Mathematics (ETM) ; 13
Classificazione	57-xx53-xx
Soggetti	Differential & Riemannian geometry Manifolds and cell complexes Differential geometry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>The Geometrisation Conjecture was proposed by William Thurston in the mid 1970s in order to classify compact 3-manifolds by means of a canonical decomposition along essential, embedded surfaces into pieces that possess geometric structures. It contains the famous Poincare Conjecture as a special case. In 2002, Grigory Perelman announced a proof of the Geometrisation Conjecture based on Richard Hamilton's Ricci flow approach, and presented it in a series of three celebrated arXiv preprints. Since then there has been an ongoing effort to understand Perelman's work by giving more detailed and accessible presentations of his ideas or alternative arguments for various parts of the proof. This book is a contribution to this endeavour. Its two main innovations are first a simplified version of Perelman's Ricci flow with surgery, which is called Ricci flow with bubbling-off, and secondly a completely different and original approach to the last step of the proof. In addition, special effort has been made to simplify and streamline the overall structure of the argument, and make the various parts independent of one another. A complete proof of the Geometrisation Conjecture is given, modulo pre-Perelman results on Ricci flow, Perelman's results on the <math>\lambda</math>-functional and <math>\mu</math>-solutions, as well as the Colding-Minicozzi extinction paper. The</p>

book can be read by anyone already familiar with these results, or willing to accept them as black boxes. The structure of the proof is presented in a lengthy introduction, which does not require knowledge of geometric analysis. The bulk of the proof is the existence theorem for Ricci flow with bubbling-off, which is treated in parts I and II. Part III deals with the long time behaviour of Ricci flow with bubbling-off. Part IV finishes the proof of the Geometrisation Conjecture.

---