



## Preface

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In this June volume you will find two survey articles.

The first article by Roland Steinbauer is written in connection with the Nobel price for physics awarded to Roger Penrose in 2020. Most mathematicians will know the celebrated Penrose tilings. However, the Nobel price stressed a lot Penrose's work with Hawking on general relativity. Hawking and Penrose developed a very general so-called singularity theory describing black holes and alike. This theory mathematically very appealing, as I think, is the subject of the survey you'll find in this volume. The article gives quite a few details and starts at a still elementary level. Not surprisingly, at the end more technical aspects will be explained. Nevertheless, I believe, and I hope you will agree, that the subject is highly interesting and anyone may find a benefit from the content of this article.

The second short article written by Ayaz, Kegel and Mohnke is an alternative approach of the well-known classification theorem of closed, connected, orientable, triangulated, and smooth 2-dimensional manifold by the genus. Several proofs of this result are known, and as far as I know all use at some point invariants from algebraic topology. The proof given in the present survey does not use algebraic topology, as is usually done, but rather normal curves and a very old result by Schoenflies.

I hope you will enjoy reading this new volume.

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