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Autore	Blagojevic Pavle V. M.
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#### Sommario/riassunto

This book gives a brief treatment of the equivariant cohomology of the classical configuration space  $F(^d, n)$  from its beginnings to recent developments. This subject has been studied intensively, starting with the classical papers of Artin (1925/1947) on the theory of braids, and progressing through the work of Fox and Neuwirth (1962), Fadell and Neuwirth (1962), and Arnol'd (1969). The focus of this book is on the mod 2 equivariant cohomology algebras of  $F(^d, n)$ , whose additive structure was described by Cohen (1976) and whose algebra structure was studied in an influential paper by Hung (1990). A detailed new proof of Hung's main theorem is given, however it is shown that some of the arguments given by him on the way to his result are incorrect, as are some of the intermediate results in his paper. This invalidates a paper by three of the authors, Blagojević, Lück and Ziegler (2016), who used a claimed intermediate result in order to derive lower bounds for the existence of k-regular and -skew embeddings. Using the new proof of Hung's main theorem, new lower bounds for the existence of highly regular embeddings are obtained: Some of them agree with the previously claimed bounds, some are weaker. Assuming only a standard graduate background in algebraic topology, this book carefully guides the reader on the way into the subject. It is aimed at graduate students and researchers interested in the development of algebraic topology in its applications in geometry.

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