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4 Beauville Structures in Cartesian Powers5 The Groups L2(q); 6 Counting Triples; 7 The Suzuki Groups; 8 The Small Ree Groups; 9 The Sporadic Simple Groups; 9.1 The Mathieu Groups; 9.2 Other Small Sporadic Simple Groups; 9.3 The Larger Sporadic Simple Groups; 10 The Groups L3(q) and U3(q); 10.1 L3(q); 10.2 U3(q); References; Remarks on Lifting Beauville Structures of Quasisimple Groups ; 1 Introduction; 2 Frattini Covers of Beauville Groups; 3 Semidirect Products with Beauville Structures; 4 Questions; References
Surfaces Isogenous to a Product of Curves, Braid Groups and Mapping Class Groups

Sommario/riassunto

This collection of surveys and research articles explores a fascinating class of varieties: Beauville surfaces. It is the first time that these objects are discussed from the points of view of algebraic geometry as well as group theory. The book also includes various open problems and conjectures related to these surfaces. Beauville surfaces are a class of rigid regular surfaces of general type, which can be described in a purely algebraic combinatoric way. They play an important role in different fields of mathematics like algebraic geometry, group theory and number theory. The notion of Beauville surface was introduced by Fabrizio Catanese in 2000 and, after the first systematic study of these surfaces by Ingrid Bauer, Fabrizio Catanese and Fritz Grunewald, there has been an increasing interest in the subject. These proceedings reflect the topics of the lectures presented during the workshop ‘Beauville Surfaces and Groups 2012’, held at Newcastle University, UK in June 2012. This conference brought together, for the first time, experts of different fields of mathematics interested in Beauville surfaces.