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Nota di contenuto	Preface -- "On the Kobayashi pseudometric, complex automorphisms and hyper•ahler manifolds" by Fedor Bogomolov, Ljudmila Kamenova, Steven Lu, and Misha Verbitsky -- "Lines on cubic hypersurfaces over finite fields" by Olivier Debarre, Antonio Laface, and Xavier Roulleau -- "Perverse sheaves of categories and non-rationality" by Andrew Harder, Ludmil Katzarkov, and Yijia Liu -- "Divisor classes and the virtual canonical bundle for genus zero maps" by A. J. de Jong and Jason Starr -- "A stronger derived Torelli theorem for K3 surfaces" by Max Lieblich and Martin Olsson -- "Morphisms to Brauer-Severi varieties, with applications to del Pezzo surfaces" by Christian Liedtke -- "Arithmetic of K3 surfaces" by Anthony Varilly-Alvarado -- "One-dimensional cohomology with finite coefficients and roots of unity" by Yuri G. Zarhin.
Sommario/riassunto	Based on the Simons Symposia held in 2015, the proceedings in this volume focus on rational curves on higher-dimensional algebraic varieties and applications of the theory of curves to arithmetic problems. There has been significant progress in this field with major new results, which have given new impetus to the study of rational curves and spaces of rational curves on K3 surfaces and their higher-dimensional generalizations. One main recent insight the book covers is the idea that the geometry of rational curves is tightly coupled to properties of derived categories of sheaves on K3 surfaces. The

implementation of this idea led to proofs of long-standing conjectures concerning birational properties of holomorphic symplectic varieties, which in turn should yield new theorems in arithmetic. This proceedings volume covers these new insights in detail. .