1. Record Nr. UNINA9910254291003321

Autore	Hofrichter Julian
Titolo	Information Geometry and Population Genetics : The Mathematical Structure of the Wright-Fisher Model / / by Julian Hofrichter, Jürgen Jost, Tat Dat Tran
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-52045-8
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XII, 320 p. 3 illus., 2 illus. in color.)
Collana	Understanding Complex Systems, , 1860-0840
Disciplina	576.58015118
Soggetti	Biomathematics Statistics Medical genetics Mathematical analysis Geometry Probabilities Mathematical and Computational Biology Statistical Theory and Methods Medical Genetics Analysis Probability Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Introduction -- 2. The Wright–Fisher model -- 3. Geometric structures and information geometry -- 4. Continuous approximations -- 5. Recombination -- 6. Moment generating and free energy functionals -- 7. Large deviation theory -- 8. The forward equation -- 9. The backward equation -- 10.Applications -- Appendix -- A. Hypergeometric functions and their generalizations -- Bibliography.
Sommario/riassunto	The present monograph develops a versatile and profound mathematical perspective of the Wright--Fisher model of population genetics. This well-known and intensively studied model carries a rich and beautiful mathematical structure, which is uncovered here in a

	systematic manner. In addition to approaches by means of analysis, combinatorics and PDE, a geometric perspective is brought in through Amari's and Chentsov's information geometry. This concept allows us to calculate many quantities of interest systematically; likewise, the employed global perspective elucidates the stratification of the model in an unprecedented manner. Furthermore, the links to statistical mechanics and large deviation theory are explored and developed into powerful tools. Altogether, the manuscript provides a solid and broad working basis for graduate students and researchers interested in this field.

2. Record Nr. UNINA9910138572003321

Titolo	Agriculture = : Polnohospodárstvo
Pubbl/distr/stampa	Warsaw, : Versita Warsaw Poland, : De Gruyter Open
ISSN	1338-4376
Soggetti	Agriculture Agronomy Agronomie Periodicals.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Periodico
Note generali	"Journal for agricultural sciences." Refereed/Peer-reviewed