



## Evolution of Stars and Stellar Populations

Maurizio Salaris, Santi Cassisi

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### DESCRIPTION

*Evolution of Stars and Stellar Populations* is a comprehensive presentation of the theory of stellar evolution and its application to the study of stellar populations in galaxies. Taking a unique approach to the subject, this self-contained text introduces first the theory of stellar evolution in a clear and accessible manner, with particular emphasis placed on explaining the evolution with time of observable stellar properties, such as luminosities and surface chemical abundances. This is followed by a detailed presentation and discussion of a broad range of related techniques, that are widely applied by researchers in the field to investigate the formation and evolution of galaxies.

This book will be invaluable for undergraduates and graduate students in astronomy and astrophysics, and will also be of interest to researchers working in the field of Galactic, extragalactic astronomy and cosmology.

- comprehensive presentation of stellar evolution theory
- introduces the concept of stellar population and describes "stellar population synthesis" methods to study ages and star formation histories of star clusters and galaxies
- presents stellar evolution as a tool for investigating the evolution of galaxies and of the universe in general

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## ABOUT THE AUTHOR

**Maurizio Salaris** studied physics at the University of Rome 'La Sapienza', and then worked at the Collurania-Teramo-Observatory, Italy, the Institut d'Estudis Espacials de Catalunya in Barcelona, Spain, the Max Planck Institute for Astrophysics in Garching, Germany, and the Astrophysics Research Institute of the Liverpool John Moores University, UK, where he currently holds the post of Professor of Stellar Astrophysics. He has published about 150 papers in peer-reviewed journals and books, plus a monograph, co-authored by Santi Cassisi. Professor Salaris's scientific work focuses on theoretical stellar evolution, stellar population synthesis models, and the interpretation of photometric and spectroscopic observations of Galactic and extragalactic stellar populations.

**Santi Cassisi** received his degree in physics from the University of Pisa, Italy, in 1991. He then spent a year at the Astronomical Observatory of Meudon-Paris, France, followed by a PhD-fellowship at the University of L'Aquila, Italy, from 1995 to 1997. In 1998, he accepted a post as staff researcher at the Collurania-Teramo-Observatory, a research unit of INAF. He currently holds a position as associate professor at the same institution. Professor Cassisi's research focuses on theoretical stellar evolution and its application to the study of both galactic and extra-galactic stellar populations. He has authored about 210 scientific papers, 115 of them in peer-reviewed journals, and a monograph.

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## FEATURES

- Introduces the theory of stellar evolution alongside its applications to stellar populations.
- Comprehensive presentation of stellar evolution theory with full explanations of the photometric and chemical properties of stars
- Introduces the concept of stellar population from an observational perspective
- Presents a comprehensive analysis of the physics necessary to understand how stars work and how they evolve.
- Presents stellar evolution as a tool to investigate the evolution of galaxies and of the universe in general
- Supplementary website with stellar evolution tracks and programmes to compute synthetic CMD's integrated magnitudes and colours