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Altri autori (Persone)	GraciaJ (Jose) De ColleF (Fabio) DownesT (Turlough)
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Nota di contenuto	I High Performance Computing -- to Message-Passing Interface -- An Introduction to Grid Computing Using EGEE -- AstroGrid and the Virtual Observatory -- II Applications in Astrophysics -- Three Dimensional Continuum Radiative Transfer -- Large-Scale Jet Simulations -- Modeling Accretion and Ejection Phenomena Around Young Stars: A Numerical Perspective -- Jet Stability: A Computational Survey -- Jets and Outflows from Collapsing Objects.
Sommario/riassunto	Studying the complex physical systems of stellar jets necessitates the incorporation of nonlinear effects which occur on a wide variety of length and timescales. One of the primary methods used to study the physics of jets is numerical simulations that apply high performance computing techniques. Such techniques are also required for analysing the huge modern astrophysical datasets. This book examines those computing techniques. It is a collection of the lectures from the fifth and final school of the JETSET network, "Jets From Young Stars V: High Performance Computing in Astrophysics." It begins with an introduction to parallel programming techniques, with an emphasis on Message Passing Interface (MPI), before it goes on to review grid technology techniques and offer a practical introduction to Virtual Observatory.

The second half of the book, then, is devoted to applications of high performance computing techniques, including 3D radiation transfer, to jet and star formation processes. Aimed at graduate students in astrophysics, this book presents state-of-the-art methods, thereby offering interesting new insights to researchers in the field.