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Collana	Lecture Notes in Physics, , 0075-8450 ; ; 267
Disciplina	520
Soggetti	Observations, Astronomical Astronomy—Observations Astrophysics Physics Computational complexity Astronomy, Observations and Techniques Astrophysics and Astroparticles Mathematical Methods in Physics Numerical and Computational Physics, Simulation Complexity
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Nota di contenuto	Dynamical evolution of globular clusters -- Disc galaxy dynamics on the computer -- Star cluster dynamics: Mathematical models -- Models of hot stellar systems -- Supercomputers and large cosmological N-body simulations -- Modelling stellar dynamical systems on the CRAY-1S and the CDC Cyber 205 -- Programming the ETA10 for large problems in stellar dynamics -- The architecture of a homogeneous vector supercomputer -- The BBN multiprocessors: Butterfly and Monarch -- The Connection Machine -- A digital Orrery -- The outer solar system for 200 million years -- Smooth particle hydrodynamics: Theory and application to the origin of the moon -- Multiple mesh techniques for modelling interacting galaxies -- Numerical

experiments on galactic halo formation -- Numerical integration using explicit taylor series -- Multiple-mesh-particle scheme for N-body simulation -- Direct N-body simulation on supercomputers -- The vectorization of small-n integrators -- N-body integrations using supercomputers -- A new numerical technique for calculation of phase space evolution of stellar systems -- An efficient N-body algorithm for a fine-grain parallel computer -- A gridless fourier method -- Techniques and tricks for N-body computation -- On toolboxes and telescopes -- A unified N-body method -- Vectorization of N-body codes -- Large scale calculations of core oscillations in globular clusters -- Round-off sensitivity in the N-body problem -- Formation of a bar through cold collapse of a stellar system -- The gravitational interaction between N-body (star clusters) and hydrodynamic (ISM) codes in disk galaxy simulations -- Standardised units and time scales.

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