

Curriculum professionale

Author of two monographs (published by the MIT Press and by Cambridge University Press), approximately 100 journal articles, more than 40 invited papers. Main scientific results on: 1) Explanation of spiral structure (normal and barred) in galaxies as a framework for all observed morphological categories. 2) Explanation of the empirical $R^{1/4}$ law of ellipticals, in a scenario of collisionless collapse (observational tests, studies of stability and of the statistical mechanics of violent relaxation). 3) Determination of role and size of dark halos in spirals and in ellipticals. 4) Aspects of the Fundamental Plane of early-type galaxies. 5) Galaxies as cosmological probes and gravitational lensing. 6) Models of globular clusters, as small quasi-relaxed stellar systems. 7) Collective phenomena in astrophysical plasmas and self-gravitating accretion disks. Collaborations: From '75 to '91 Visiting Scientist at MIT (Visiting Associate Professor in '85). Since '92 he has been Research Affiliate of MIT. Collaborates also with: STScI (Baltimore, USA), Kapteyn Astronomical Institute (Groningen, NL), and ESO (Munich, D; for the period 2000-2002, member of Panel A1 for cosmology as adviser of the Observing Programmes Committee). In the fall of 2006 and in January 2009 he has been member of the KAVLI Institute for Theoretical Physics, University of California at Santa Barbara. He has been National P.I. of the Research Program "GALAXY SCALING LAWS" (MURST grant: co-fin 1998), of the Research Program "HALOS AND DISKS OF GALAXIES" (MURST grant: co-fin 2000), and of the Research Program "COLLECTIVE PHENOMENA IN THE DYNAMICS OF GALAXIES" (MIUR grant: co-fin 2004). He was elected to Italy's Accademia Nazionale dei Lincei (Classe di Scienze, Sezione Fisica e applicazioni) in 2013, the same year he received its "Premio Nazionale del Presidente della Repubblica" in Science.