Europass Curriculum Vitae

Personal information

Name / Surname	**Matteo Teodori**
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Nationality	Italian
Date of birth	22/07/1997

Research experiences

01/12/2022	**PhD student at University of Campania "Luigi Vanvitelli"** studying the dynamical evolution and multiple-populations in Globular Clusters. Supervisors: Prof. Oscar Straniero and Prof. Lucio Gialanella.
01/06/2022-30/11/2022	**Studentship at INAF-IAPS** entitled "Activity of study and formation of planetary structures, through modelling and/or remote sensing and/or laboratory data" concerning the projects "ExoMars", "Dawn" and "TRIS". Study of the numerical methods of Smoothed Particle Hydrodynamics for the simulation of hydrodynamic phenomena of interest for the mentioned projects.
February 2022 - June 2022	**Stage at INAF - Astronomical Observatory of Rome**, finalized at learning the mathematical techniques of the "Information Field Theory" and their application to astronomical data, with reference to the high-contrast images produced within the SHARK-VIS project, an instrument intended for the LBT telescope for deep detection of exoplanets through direct images.
From January 2022	**Research activities at the Physics Department - University of Rome "La Sapienza"**, concerning the study of multi-mass models for Globular Clusters.

Education

16/11/2021	**Master degree in Astronomy & Astrophysics, University of Rome "La Sapienza", degree mark 110/110 *cum laude***. Thesis title: Gravothermal catastrophe in models for Globular Clusters with a mass distribution. Supervisor: Prof. Marco Merafina.
01/10/2019	**Bachelor's degree in Physics, University of Rome "La Sapienza", degree mark 104/110**. Dissertation title: Carbon ignition curves for massive stars. Supervisor: Prof. Oscar Straniero
2016	**Scientific High School diploma, degree mark 85/100**.

Research Interests

Stellar dynamics, collisional systems, Globular Clusters, stellar systems and populations, gravothermal catastrophe, formation, evolution and stability of self gravitating systems. I am also interested in other topics concerning gravity, stellar formation and evolution, dark matter, planetary sciences and numerical methods for simulations and data analysis.

Pubblications

2023 — Merafina M. and Teodori M., "Generalization of the Fokker-Planck equation for stellar orbit diffusion in multi-mass star systems", submitted to International Journal of Modern Physics D [arXiv: 2205.10209]

Collaborations

– Participation to scientific meetings of the research group lead by Prof. Marco Merafina at University of Rome "La Sapienza", concerning a research project entitled "Stellar evolution and dynamical evolution in Globular Clusters: theoretic development and N-body simulations".

– Collaboration with INAF-OAR for the development of codes for High Contrast Imaging for the SHARK-VIS project, finalized at the direct detection of extrasolar planets.

– Collaboration with INAF-IAPS for the study of volatiles emission from planetary surface and fractures using a Smoothed Particle Hydrodynamics approach.

Conferences/workshops

8-12 May 2023 — Biennial European Astrobiology Conference BEACON 2023, La Palma & Teneguia Princess Hotel on Fuencaliente, La Palma Island (Canary Islands, Spain). Poster: *Volatiles emission from a cavity on a planetary surface using smoothed particle hydrodynamics*.

6-10 February 2023 — XVIII Congresso Nazionale di Scienze Planetarie, Perugia. Talk: *Volatiles emission from a fracture on a planetary surface: a Smoothed-Particle-Hydrodynamics approach*.

14 November 2022 — G11 Workshop, Physics Department, University of Rome "La Sapienza". Talk: *Multi-mass collisional stellar systems models for Globular Clusters*.

Seminars

16 February 2023 — INAF-OOAb colloquia - *The interconnection between multi-mass dynamical models and multiple populations in Globular Clusters*, Matteo Teodori (University of Campania *Luigi Vanvitelli*).

Personal skills

Mother tongue — **Italian**

Other languages

Self-assessment *European level*(*)

	Understanding		Speaking		Writing
	Listening	Reading	Spoken interaction	Spoken production	
English	B1	B1	B1	B1	B1

(*) *Common European Framework of Reference* (CEF) level

IT skills — Good ability to use **Office automation** packages, in particular with software for presentation, document elaboration and spreadsheets. Good ability in managing videoconferencing and basic knowledge of remote control. Good ability of **data analysis and visualization**, in particular with MATLAB. Good knowledge of LaTeX, in particular for scientific reports drafting. Known programming languages: **C, Fortran, MATLAB, Python**.

Communication — Ability of work in team (experiences at INAF, university laboratory experiences, report drafting, team sports). Mediation skills (construction of dialogue and confrontation environments). Intercultural communication skills.

Organization — Ability of time, information and energies organization. Ability to be authoritative, welcoming and listening. Able to organize and lead team work.

Professional skills — Good data analysis skills. Experience with educational (university laboratories) and amateur (free time) telescopes.

Other skills — Fast and continuous learning. Precision and attention to details. Good problem solving skills. Flexibility and initiative spirit. Ability to achieve a set goals.

Driving license	B