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Curriculum Vitae



Personal information

First name(s) / Surname(s) **Roberta Sparvoli**
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E-mail roberta.sparvoli@roma2.infn.it
Nationality Italian
Date of birth February 7th, 1970
Gender Female

Work experience

Dates Since 29th January 2015
Occupation or position held **Associate Professor SSD FIS/04, SC 02/A1 at the Rome “Tor Vergata” University**

Main activities and responsibilities	Teaching, Research <ul style="list-style-type: none"> • Teacher of the course “Nuclear and Subnuclear Physics” for the Physics Master classes. • Teacher of the course “Informatics Lab” for the Material Science Master classes. • Member of the PHD Commission at the University of Rome Tor Vergata. • Coordinator of the INFN National Commission for Astroparticle Physics on behalf of the Rome Tor Vergata INFN Structure. • National Coordinator of the “CSES/Limadou” experiment at the INFN Research Committee. • Coordination of the “WiZard/PAMELA” research group at the University of Rome Tor Vergata. • Local coordinator of the WiZard experiment at the INFN Research Committee. • Delegate of the University of Rome Tor Vergata at the CIFS (Consorzio Interuniversitario di Fisica Spaziale) Consortium for Space Physics.
Name and address of employer	Rome “Tor Vergata” University
Type of business or sector	Public University
Dates	2004-2015
Occupation or position held	Researcher
Main activities and responsibilities	Research, Assistant to Teaching
Name and address of employer	Rome “Tor Vergata” University
Type of business or sector	Public University
Dates	2000-2004
Occupation or position held	TD Researcher
Main activities and responsibilities	Data analysis and simulation for the space experiments NINA and PAMELA. Scientific analysis of the galactic and solar data coming from the telescope NINA in space. Simulation of the performance of the space telescope PAMELA. Coordination of the data analysis groups.
Name and address of employer	Italian National Institute of Nuclear Physics INFN
Type of business or sector	Public Research Institution
Dates	1998-2000
Occupation or position held	Post-Doc
Main activities and responsibilities	Data analysis and simulation for the space experiment NINA. Scientific analysis of the galactic and solar data coming from the telescope NINA in space.
Name and address of employer	Italian National Institute of Nuclear Physics INFN
Type of business or sector	Public Research Institution
Education and training	
Dates	1994-1997
Title of qualification awarded	Ph.D. in Physics

Principal subjects/occupational skills covered	Title of thesis: "NINA: a New Instrument for Nuclear Analysis of primary cosmic rays". Development of a space mission, simulation of the scientific performance, data analysis.																								
Name and type of organisation providing education and training	Rome "Tor Vergata" University																								
Dates	1989-1994																								
Title of qualification awarded	Physics Degree																								
Principal subjects/occupational skills covered	Solid preparation in modern theoretical, experimental and applied physics; deep understanding of the method scientific investigation; thorough knowledge of mathematics and computing; ability to model complex systems in different fields																								
Name and type of organisation providing education and training	Rome "Tor Vergata" University																								
Dates	1984-1988																								
Title of qualification awarded	Scientific Diploma																								
Principal subjects/occupational skills covered	High level preparation in Sciences, Humanities and Art. English preparation up to level B2. Primer in technology and computer science.																								
Name and type of organisation providing education and training	Liceo Scientifico Pitagora																								
Personal skills and competences																									
Mother tongue(s)	Italian																								
Other language(s)																									
Self-assessment																									
<i>European level (*)</i>																									
English																									
German																									
	<table border="1"> <thead> <tr> <th colspan="2">Understanding</th> <th colspan="2">Speaking</th> <th colspan="2">Writing</th> </tr> <tr> <th>Listening</th> <th>Reading</th> <th>Spoken interaction</th> <th>Spoken production</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td>C2</td> <td>C2</td> <td>C2</td> <td>C2</td> <td colspan="2">C2</td> </tr> <tr> <td>C2</td> <td>C2</td> <td>C2</td> <td>C2</td> <td colspan="2">C1</td> </tr> </tbody> </table>	Understanding		Speaking		Writing		Listening	Reading	Spoken interaction	Spoken production			C2	C2	C2	C2	C2		C2	C2	C2	C2	C1	
Understanding		Speaking		Writing																					
Listening	Reading	Spoken interaction	Spoken production																						
C2	C2	C2	C2	C2																					
C2	C2	C2	C2	C1																					
	(*) Common European Framework of Reference for Languages																								
Organisational skills and competences	Experienced Teacher for several Physics courses. Participation and Coordination of research groups at national and international levels. Lecturer for the International School of Astrophysics and for the International School of Space Sciences																								
Technical skills and competences	Analysis and interpretation of scientific data, writing of scientific articles, organization and management of research groups.																								
Computer skills and competences	Software management of PC and workstation platforms. Proficient with both Linux OS and Windows OS at SysManager Level. Programming skills in Fortran, C, LaTeX, HTML languages.																								
Other skills and competences																									
Driving licence	"B" Italian driving licence																								

Additional information

Nuclear, antimatter and dark matter component in cosmic rays

The scientific activity of Prof. Roberta Sparvoli has been mainly dedicated to the field of Astroparticle Physics, in particular with regard to the study of nuclear and isotopic component of cosmic rays and the antimatter component (positrons and antiprotons, detection of any antinuclei), and search for possible indirect evidence of dark matter. These studies were carried out in space, by stratospheric balloons and on satellites, as part of the experimental program of the WIZARD collaboration. Among the most important missions on balloon of this collaboration we can remember MASS89, MASS91, TS93, CAPRICE94 and CAPRICE98. As for space missions, the WIZARD collaboration sent into space the telescopes NINA, NINA2 and PAMELA.

The space mission PAMELA represents a state-of-the-art of the investigation of the cosmic radiation, addressing the most compelling issues facing astrophysics and cosmology: the nature of the dark matter that pervades the universe, the apparent absence of cosmological antimatter, the origin and evolution of matter in the galaxy. PAMELA, a particle identifier using a permanent magnet spectrometer with a variety of specialized detectors, is an instrument of extraordinary scientific potential that is measuring with unprecedented precision and sensitivity the abundance and energy spectra of cosmic rays electrons, positrons, antiprotons and light nuclei over a very large range of energy from 50 MeV to hundreds GeV, depending on the species. One of the main scientific objectives of PAMELA is also the detection of SEP events and solar phenomena, in view of the Space Weather. PAMELA has been put in orbit, on board of the Resurs-DK1 Russian satellite by a rocket Soyuz, on the 15th of June 2006. More than 70 outstanding publications have been already produced by PAMELA.

Roberta Sparvoli is member of the CALET collaboration too, who has sent in orbit on board the ISS a sophisticated calorimeter in August 2015. Aim of the CALET experiment is to measure electrons and nuclei in cosmic rays up to the hundreds of TeV energies.

Currently Roberta Sparvoli participates to the experiment GAPS, that is a balloon-borne experiment located in the USA, aimed at searching for anti-deuteron in cosmic rays as signature of dark matter annihilation.

Life science in space

A parallel scientific interest of Roberta Sparvoli is in the field of life science in space, with the missions Si-Eye1 and Sil-Eye2 on the Russian MIR space station, respectively, in the periods 1995-1998 and 1998-2000, and the missions Si-Eye3 (in 2002) and ALTEA (in 2006), on the ISS, the latter still in progress. These experiments performed a continuous monitoring of radiation within the Space Stations and allowed a detailed study of the risks to the astronauts due to ionizing particles.

Monitoring of the seismic activity from space

In the last years, Roberta Sparvoli became part of the collaboration CSES / Limadou. The main scientific objective of the mission CSES (China Seismo-Electromagnetic Satellite) is studying electromagnetic phenomena and their correlation with the geophysics activity, contributing to the monitoring of earthquakes from space.

The satellite CSES will host an Italian payload. The Italian contribution to the mission CSES, in fact, consists of an innovative instrument to measure energetic particles that precipitate from the Van Allen belts as a result of electromagnetic interference.

The satellite will have aboard a wide range of instruments (magnetometers

fluxgate and search-coil, high energy particle detectors, LP-RPA and ion drift meter) designed to jointly detect perturbations of different parameters and physical variables.

The scientific activity of Roberta Sparvoli is testified by 150 records as refereed articles in the SCOPUS database and by the numerous congress and meeting participations.

Additional information

Affiliations and Committee Memberships:

- INFN (Italian National of Nuclear Physics)
- SIF (Società Italiana di Fisica)
- CIFS (Consorzio Italiano di Fisica Spaziale)
- ISE (Istituto Scientifico Europeo)
- Editor for "Special Issue of Advances in Space Research: Origins of Cosmic Rays"
- Referee for Astrophysical Journal, Astronomy & Astrophysics, Astroparticle Physics, Advances in Space Research, Nuclear Instruments and Methods in Physics Research.

