

PERSONAL INFORMATION

Livius-Marian Trache



Location Affiliation IFIN-HH Bucharest-Magurele
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Sex Male | **Date of birth** 10/12/1952 | **Nationality** Romanian

WORK EXPERIENCE

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| From June 2012 until present | <p>Senior Scientist gr. I
„Horia Hulubei” National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), 30 Reactorului str., Magurele, Ifov county, Romania</p> <ul style="list-style-type: none"> ▪ Research in nuclear physics, fundamental and applied, with his own group. ▪ Coordinates the scientific activities of Nuclear Astrophysics Group at IFIN-HH Bucharest ▪ Represents IFIN-HH or Romania in large scientific collaborations. <p>Business or sector Research</p> |
| From June 2020 until July 2020 | <p>Head of Nuclear Physics Department of IFIN-HH.</p> <ul style="list-style-type: none"> ▪ Coordinated scientific activities of the largest department of IFIN-HH ▪ Research in nuclear physics, fundamental and applied <p>Business or sector Research</p> |
| From June 2012 until Aug. 31, 2017 | <p>Scientific Director
Horia Hulubei” National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), 30 Reactorului str., Magurele, Ifov county, Romania</p> <ul style="list-style-type: none"> ▪ Coordinated scientific activities of the largest research institute in Romania. ▪ Research in nuclear physics, in particle physics, applications of subatomic physics; national nuclear laboratory, etc. <p>Business or sector Research</p> |
| From Sept 1993 until Jan. 2013 | <p>Research Scientist/Senior Scientist
Texas A&M University, Cyclotron Institute, College Station, TX 77843-3366, USA</p> <ul style="list-style-type: none"> ▪ Research in nuclear physics, exotic nuclei, and nuclear astrophysics <p>Business or sector Research university</p> |
| From October 1978 until October 1998 | <p>Physicist and Research Scientist gr. III, then II
National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), 30 Reactorului str., Magurele, Ifov county, Romania</p> <ul style="list-style-type: none"> ▪ Research in fundamental and applied nuclear physics. |
| From January 1982 until April 1983 | <p>Research fellow of the Bundesministerium fur Forschung und Technologie, Bonn, Germany
Institut fuer Kernphysik der Universitaet zu Koeln, 77 Zuelpicherstr, Koeln, Germany</p> <ul style="list-style-type: none"> ▪ Research in nuclear structure - PhD student level |

In 1987-88, 1990-93 **Visiting Researcher**

Institut fuer Kernphysik der Universitaet zu Koeln, 77 Zuelpicherstr, Koeln, Germany
Kernfissich Versneller Institut Rijksuniversiteit, Gronigen, The Netherlands

- Academic research in nuclear physics

Business or sector Academic research

**EDUCATION
AND TRAINING**1971 - 1976 **Physics student**

Faculty of Physics, University of Bucharest, Romania

- Nuclear Physics

1977 - 1987 **PhD in Physics**

Central Institute of Physics, Bucharest, Romania

- Nuclear Physics

**PERSONAL
SKILLS**

Other skills Extensive research experience in experimental and theoretical nuclear physics in laboratories on 3 continents. With work in gamma-ray and charged particles spectroscopy, in the interaction of fermionic and bosonic degrees of freedom in nuclei, in the production and study of nuclei far from stability and nuclear astrophysics, nucleus-nucleus scattering, breakup of nuclei at intermediate energies. Pioneering work in the use of radioactive nuclear beams in transfer reactions, exotic decays, and nuclear astrophysics.

Current work with several groups on **nuclear physics for astrophysics** programs with **direct** and **indirect methods**. It concentrates on direct measurements in Bucharest at small accelerators and an ultra-low background laboratory in a salt mine and on indirect methods at international laboratories using radioactive ion beams (at Texas A&M University, RIBF RIKEN, GSI/FAIR, GANIL, etc.)

Basic training in experimental nuclear physics, with contributions in equipment design and construction. Experimental work in Europe and USA at various large and medium size nuclear accelerators, including tandems (Bucharest, Cologne and Munich) and cyclotrons (Julich, Germany, Groningen and Texas A&M University) with gamma-ray and neutron detectors and with large magnetic spectrometers. Experienced also in **applied nuclear physics**, ranging from the analysis of macro-elements (at percent level) and trace elements (at or under part per million level) in archaeological material and in semiconductors.

Parallel with the experimental work I did theoretical work on the interplay of single particle and collective degrees of freedom in nuclei (in particular around the closed shells $N=82$, $Z=50$ and $N=Z=28$), on heavy ion elastic scattering and DWBA description of nucleon transfer reactions and on the use of the breakup of radioactive projectiles for nuclear astrophysics. Contributions in indirect methods in nuclear astrophysics using rare ion beams. Current or past collaborations with researchers from other laboratories in Europe, US, and Japan (Bucharest, Prague, GANIL Caen, Catania, Surrey, Oak Ridge, Notre Dame, MSU, RIKEN, HIMAC, etc.) resulted in joint experimental work and publications.

Director of Carpathian Summers Schools of Physics 2005, 2007, 2010, 2012, 2014, 2016, 2018, 2021 and 2023, with proceedings published with the American Institute

of Physics. Leadership positions in projects of the European nuclear physics community.

Co-chair of the European Network of Nuclear Astrophysics Schools (ENNAS).

ADDITIONAL INFORMATION

Publications Over 230 papers published in ISI journals, over 3600 citations. Hirsch-index: 36 (as on 2023).

Memberships Member of the American Physical Society (APS), of the American Associations for Advance of Science (AAAS), the European Physics Society
Referee of the main journals of APS, IOP and EPS
Evaluator for Romanian, American and British scientific funding agencies
Member of International Advisory Committees of physics schools and conferences (in Romania, Italy, USA, Japan, Austria, Canada, etc.)