

# BIOGRAPHY

## JUAN G. ROEDERER

Professor of Physics Emeritus  
Geophysical Institute, University of Alaska-Fairbanks  
Now living in Boulder, Colorado

Juan G. Roederer is Professor of Physics Emeritus of the University of Alaska-Fairbanks. Born in Trieste, Italy, in 1929, raised in Austria and educated in Argentina, he received a doctorate in physical-mathematical sciences from the University of Buenos Aires in 1952. From 1956 to 1966 he was professor of physics at that university. In 1967 he moved to the United States where he became professor of physics at the University of Denver, Colorado. In 1977 he was appointed director of the world-renowned Geophysical Institute of the University of Alaska, a post held until 1986; during that time he also served four years as dean of the College of Environmental Sciences. Afterwards he taught and conducted research at that university until his move to Boulder, Colorado, in 2014. A visiting staff member of the Los Alamos National Laboratory since 1978, he was chairman of its advisory committee on Earth and Space Sciences from 1983 to 1988. From 1986 to 1992 he also served two United States presidents as chairman of the United States Arctic Research Commission. Between 1997 and 2003 he was senior adviser to the director of the Abdus Salam International Centre for Theoretical Physics in Trieste, Italy.

Roederer's research fields are space physics, psychoacoustics, science policy and information theory; he is author of over 200 articles in scientific journals. He conducted pioneering research on solar cosmic rays, on the theory of Earth's radiation belts, on neural networks for pitch processing and, recently, on the concept of pragmatic information. His books "Mecánica Elemental", "Dynamics of Geomagnetically Trapped Radiation" and "Physics and Psychophysics of Music" are acclaimed classical university textbooks; the latter two were translated into Russian, and German, Spanish, Portuguese and Japanese, respectively. He published a book "Information and its Role in Nature" in May 2005, dealing with his ideas on the foundations of information theory. In early 2014 he published, with co-author Hui Zhang, the book "Dynamics of Magnetically Trapped Particles: Foundations of the Physics of Radiation Belts and Space Plasmas". His most recent book (2015) is "Electromagnetismo Elemental", another textbook for Latin American universities. Roederer served as member and chairman of several US Academy of Sciences/National Research Council committees, and was president of the International Association of Geomagnetism and Aeronomy and of the ICSU Committee on Solar Terrestrial Physics.

Roederer is a member of the Third World Academy of Sciences and of the Academies of Science of Austria and Argentina, as well as a Fellow of the American Geophysical Union, the American Association for the Advancement of Science and the International Union of Geodesy and Geophysics. He received the medal "100 Years in Geophysics" from the former Soviet Academy of Sciences, and four awards from NASA for his collaboration in the "Galileo" space mission to Jupiter. He is an accomplished organist and fluent in four languages.

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