

Session
dedicated to
David
Sedrakian 80th
birthday

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MPCS 2018, September 21, 2019

- 1 David Mgerovich Sedrakian was born on December 9, 1938 in Yerevan.
- 2 In 1955 he graduated from Yerevan secondary school No. 4 with a gold medal. In the same year he entered and in 1961 graduated with honors from the Physics Department of Yerevan State University.
- 3 In 1962 he entered the graduate school of the theoretical department of the P. N. Lebedev Physical Institute of the Academy of Sciences of the USSR. In 1964, under the guidance of Professor Boris Bolotovskiy in the department led by Vitaly Ginzburg, he defended his thesis for the degree of candidate of physical and mathematical sciences on the subject “Diffraction radiation of a point charged particle”.

- 1 Since 1964 he has been working at Yerevan State University: in 1964-1967 he was an assistant in the Department of Theoretical Physics, in 1967-1975 - an assistant professor, since 1975 - a professor.
- 2 In 1972, at Yerevan State University, he defended his thesis for the degree of Doctor of Physics and Mathematics on the topic “Theory of Rotating Celestial Bodies”.
- 3 In 1982, he was elected a corresponding member of the Academy of Sciences of the Armenian SSR. In 1977-1986 he was the head of the Department of General Physics of Yerevan State University. In 1986-1990, he served as academician-secretary of the Academy of Sciences of the Armenian SSR.
- 4 In 1990, he was elected an academician of the Academy of Sciences of the Armenian SSR. In 1990-1994, he served as vice president of the Academy of Sciences of the Armenian SSR (NAS RA). University.

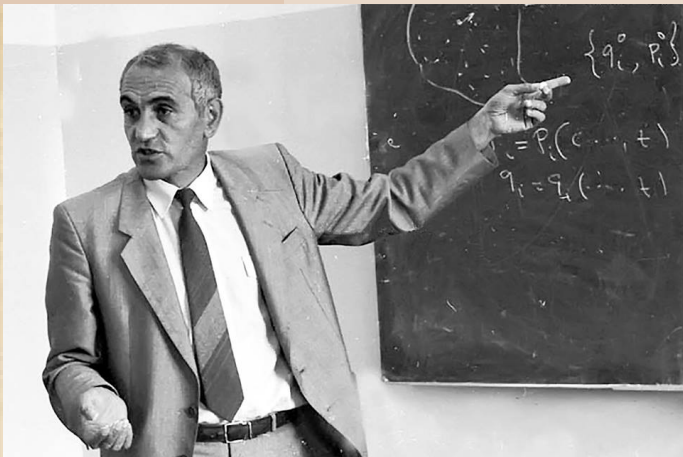
- 1 In 1994-2013 he was again the head of the Department of General Physics of Yerevan State University (since 2008 - the Department of General Physics and Astrophysics named after Academician V. A. Ambartsumyan), since 2013 - the Honorary Head of the Department. He is also a professor at the Department of General Physics and Quantum Nanostructures of the Russian-Armenian Slavic University.
- 2 David Sedrakian was a visiting scientist at Cambridge, Cornell, Rome Universities, Meudon Observatory, Institut d'Astrophysique Paris, a participant in many international scientific conferences on theoretical physics.
- 3 For a long time he was the editor-in-chief of the journal Izvestia AN SSSR. From 2000 to 2017, he was the chief editor of the Astrophysics journal of the NAS RA. Sedrakian is a member of the International Astronomical Union since 2001.

- 1 David Sedrakian (together with academician Edward Chubaryan) constructed the theory of slowly rotating stellar configurations in the years 1967-1968, which are described by a one-parameter equation of state in the framework of the Newton and Einstein theories.
- 2 They obtained one of the few solutions of the Einstein equations for the gravitational field - a solution with axial symmetry in vacuum. The Einstein equations are expanded in a small parameter $\beta = \text{kinetic energy} / \text{gravitational energy}$. Matching of interior and exterior solutions.
- 3 The theory served as the basis for proposing a new methodology for calculating the parameters of rotational configurations, which was used to calculate new models of rotating celestial bodies.

- 1 Among the scientific interests of Sedrakian is the study of physical phenomena inside neutron stars. One key result concerns the entrainment effect acting between the neutron and proton condensates. [Similar effect was proposed by Andreev and Bashkin for neutral mixtures of superfluid phase of helium.]
- 2 Introduction of the entrainment effect in the nuclear physics and astrophysics of compact stars (1980-1981). This is now a well-known and generally accepted phenomenon. It was shown that entrainment of proton condensate by the neutron condensate leads to non-quantized flux on the neutron vortex. This leads to generation of axisymmetric magnetic fields in neutron stars.

- 1 Developed the theory of radiation of electromagnetic waves from the interiors of neutron stars. According to Sedrakian, radiation is formed between the core and the crust of the pulsar, and propagates in the form of a magneto-acoustic wave to the surface. The currents excited by the wave are a source of radio emission.
- 2 Also investigated the observed deceleration of the rotational motion of the pulsars, proposed a mechanism of inhibition of the rotational motion, which is accompanied by jumps in the angular velocity of the pulsars (glitch).

- 1 Sedrakian obtained results in a study of the theory of rotating superconductors and superfluid quark liquid in the cores of neutron stars.
- 2 In the recent years he is engaged in research devoted to calculating the energy spectrum of an electron, transmission and reflection coefficients of electrons, and study of the localization of electrons.
- 3 David Sedrakian is the author of more than 250 scientific articles



David Sedrakian has been teaching physics at the YSU for over 50 years; he has written textbooks “Thermodynamics and Statistical Physics” (1979) and “Electricity and Magnetism” (2010).

- 1 Medal "For Merit to the Fatherland" 1st degree (02.27.2019)
- 2 Medal of Anania Shirakatsi (1999).