



MILAN S. DIMITRIJEVIĆ

Born on 24. August 1947. in Leskovac. Primary school and Classical high school finished in Belgrade. He graduated in 1972 astronomy and physics in 1973 at the Faculty of Sciences in Belgrade. On the same Faculty he obtained a master's degree in 1976 and doctorate in 1978. He was employed at the Institute of Physics in Belgrade 1974-1978, 1983-1984, Institute of Applied Physics, 1978-1983, at the Astronomical Observatory from 1984 to 2012. Since 2012. retired. Federal Minister for Science, Technology and Development from 1993 to 1994. Director of the Astronomical Observatory from 1994 to 2002. Since 2009, Affiliated Fellow of the Paris Observatory in the Laboratoire d' Etudes du Rayonnement et de la Matière en Astrophysique. President of the Society of Astronomers of Serbia (2008-2014). President of the Astronomical Society "Rudjer

Bošković" 1982-2005. The editor in chief of the magazine "Vasiona" (Universe) from 1985 to 2004. Co-chairman of the Working Group on collision processes of the International Astronomical Union (2006-2015), member of the Board of Euro-Asian Astronomical Society and President of its Representative Office in Serbia. He was a member of the Council of the European Astronomical Society (2008-2012). From 9. of January 2001. he is member of the Academy of nonlinear sciences in Moscow and its Yugoslav section which later became the Serbian Academy of nonlinear sciences. From 25. of November 2020, he is member of International Slavic Academy. Member of the Association of Writers

Dimitrijević speaks fluently russian, french, english, bulgarian and italian, he has Γ elementary proficiency in spanish, german and polish.

Although he is retired from 2012 he continued his research work, even more intensively than before,

Research Interests: Scientific papers of Milan S . Dimitrijević, are primarily in the field of astronomy, but also in certain areas of physics, applied mathematics, information technology, and the history and philosophy of science. As new scientific field in Serbian Astronomy, he introduced theoretical study of the lineshapes in stellar spectra and, in collaboration with A. A. Mihailov, investigations of the impact of atomic and molecular collision processes on the optical properties of stellar atmospheres.

Scientific Results: As of May 2021, Dimitrijević has published 342 scientific papers in international peer-reviewed journals. The most important scientific achievements of Dimitrijević are in stellar spectroscopy and laboratory plasmas. In several papers, together with N. Konjević, V. Kršljanin and L. Č. Popović, he formulated and developed a modified semiempirical approach for the calculation of the parameters of the spectral lines broadened by Stark effect. This approach has found wide applications in astronomy and physics. He also developed and tested a number of different approximate methods to calculate and estimate the parameters of spectral lines, broadened by collisions with charged particles, suitable for different situations encountered in stellar atmospheres. The investigations of profiles of the lines of multi- charged ions are often the first systematic theoretical studies of this kind. In collaboration with N. Ben Nessib from Tunisia and S. Sahal - Brechot from Paris, by merging and connecting computer programs, it was realized ab initio calculation of Stark broadening parameters, which needs only the quantum numbers and atomic structure. Together with S. Sahal-Brechot he made an international database of Stark broadening of spectral lines STARK-B, which includes their common results, published in more than 100 papers in international journals.

Dimitrijević has shown that the mechanism of Stark broadening of spectral lines may be

important for the analysis and synthesis of stellar spectra and modeling of stellar atmospheres and he investigated under which conditions, and in which class of stars, this mechanism is the most prominent.

Together with A. A. Mihajlov, he has investigated the influence of ion - atom collision processes with the formation of quasimolecular complex, on emission, absorption and recombination in the atmospheres of cool stars and white dwarfs, and it was shown that a group of, earlier neglected, processes must be taken into account when modeling the atmospheres of helium-rich white dwarfs and of some layers of the solar atmosphere.

Dimitrijevic has made a significant contribution to the study of the history of astronomy among Serbs, especially analyzing works of Milutin Milanković and Djordje Stanojević, but in cooperation with Efstratios Theodossiou and Vassilios Manimanis from Athens, he also researched and Byzantine astronomer Nikiforos Grigora, work of Basil the Great, Riga Ferreos, pre-Socratic philosophers, the concept of development of heliocentric ideas, from the Orphic hymns, through the Pythagoreans and Aristarchus to the Emperor Julian, astronomical themes in the Iliad and the Odyssey, the star Sirius in ancient literature, as well as cosmic motives of Serbian medieval numismatics.

Author of the book "Serbian astronomers in the Science Citation Index in the twentieth century" (2005), "Astronomical Spectroscopy" (1998), series of books "Spectral lineshapes investigations in Yugoslavia and Serbia " I-V (1990-2001), "Belgrade Astronomical Observatory" in the years from 1995 to 2000", and books of poetry "Poems" (translated also in Bulgarian), the anthology of cosmic poetry "Cosmic Flower" poetry translated from Bulgarian «In front of stargate», and, together with A. Bajić, translation with astronomical comentaries of Ovid's book «Fasti».

Response to Research Results: According to the database of NASA ADS (http://adsabs.harvard.edu/cgi-bin/nph-abs_connect) within the period 1974-2018 he has 2219 citations without autocitations. Hirsh factor is according to NASA ADS (period 1974 – 2018) - 27; and according to WEB of Science (period 1996-2018) - 22. According to Google Scholar, on the day of 28. May 2021, he has 7253 citations (with autocitations), Hirsh factor is 37. His 47 invited lectures have been printed in books of international publishers. Award for Scientific Work of the Astronomical Observatory in 1996 and 2002.

Educational activities: On the Faculty of Mathematics in Belgrade at postgraduate or doctoral studies taught: "Astronomical Spectroscopy" and "Effects of collisions with charged particles at astrophysical plasma spectra". In European AstroMundus master studies in astronomy taught "Spectral Lineshapes in Astrophysics ". Dimitrijević was supervisor for 5 PhD dissertations and 4 MsC theses. He has published more than 250 articles popularizing astronomy, and, with A. Tomić, astronomy textbook for secondary school (eight editions in Serbian, translated into Albanian and Macedonian). Wrote and recorded for TV Belgrade and Novi Sad around ten series on Astronomy (three issued as video cassettes for teaching).

Organizational: Besides that he was Federal Minister for Science, Technology and Development from 1993 to 1994 and Director of the Astronomical Observatory from 1994 to 2002, Dimitrijević has had a very successful international cooperation. He managed international projects with the Paris Observatory, University of London, Durham and Athens, Institute of Theoretical Astronomy in Moscow and the Institute for Astronomy in Sofia. He was the head of the Serbian part of a large international project to create an European Virtual Centre of atomic and molecular data, primarily for modeling stellar atmospheres, the first FP7 project of the European Union in astronomy in Serbia .

He organized over 30 international and national scientific conferences, such as the series "Serbian conference on spectral line shapes in astrophysics", and a series of joint conferences with the Bulgarian, Romanian, Hungarian and Belarusian astronomers. In order to promote research on the history of astronomy, the study of cosmic - astronomical inspiration, motivation and communication in archaeology, philosophy, poetry, literature, music, painting... he organized a series of scientific conferences "Development of astronomy among Serbs" I-XI (Belgrade 1997, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2017, 2019, 2021), which brought together a number of scholars, writers and artists.

Contribution to Nonlinear Sciences: Dr. Dimitrijrvić's previous scientific work is mostly dedicated to research in nonlinear sciences, primarily in spectroscopy, research of stellar atmospheres and research of collision processes.

A List of 5 Selected Research Publications

1. M.S. Dimitrijević, N. Konjević: Stark widths of doubly- and triply-ionized atom lines, *Journal of Quantitative Spectroscopy and Radiative Transfer*, 24, 451, 1980
2. M. S. Dimitrijević, N. Konjević: Simple estimates for Stark broadening of ion lines in stellar plasmas, *Astronomy and Astrophysics*, 172, 345, 1987
3. M. S. Dimitrijević, L. Č. Popović: Modified semiempirical method, *Journal of Applied Spectroscopy*, 68, 893, 2001
4. M. S. Dimitrijević: Stark broadening in astrophysics, *Astronomical & Astrophysical Transactions*, 22, 389, 2003
5. M. S. Dimitrijević, L. Č. Popović, J. Kovačević, M. Dačić, D. Ilić,: The flux ratio of the [OIII] $\lambda\lambda 4959, 5007$ lines in AGN: Comparison with theoretical calculations, *Monthly Notices of the Royal Astronomical Society*, 374, 1181, 2007

Websites for additional informations: <https://www.researchgate.net/profile/Milan-Dimitrijevic-2>
<https://publons.com/researcher/1192916/milan-s-dimitrijevic/>