

Plenary Session

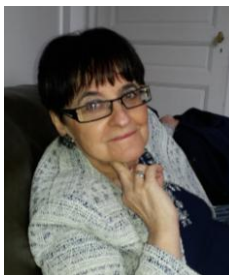
KEYNOTE LECTURE:

„Modern activities of the International Atomic Energy Agency“

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Abstract: The mission of the IAEA is related to the promotion of nuclear technologies and the control of atoms. Recently, the agency has focused on several new challenges, such as fusion reactors, small modular reactors, and artificial intelligence, but also on some old problems, such as nuclear knowledge management. In the domain of nuclear fusion, the IAEA focuses on the development and databases for two types of fusion energy: magnetic fusion energy (MFE) with tokamak and stellarator systems and inertial fusion energy (IFE), with high-energy lasers. Small modular reactors with output power (10-300) MWe are a class of nuclear fission reactors of various types. The IAEA is focused on the most common PWRs and 6 types of Generation IV reactors. IAEA activities include design, nuclear safety, radioactive waste, nuclear proliferation, databases, and licensing processes. The agency recognized the significant impact of artificial intelligence and machine learning methods on nuclear sciences and technologies, therefore it is strongly involved in AI application streams by forming the "AI for Atoms" portal, bringing a series of documents, and establishing databases following FAIR practice. IAEA launched 16 projects related to the application of artificial intelligence in nuclear technologies as well as the ethical principles of the application of ML and AI in nuclear technologies. Nuclear knowledge management is an old problem. The focus of the agency is on the implementation and improvement of the Strategic Plan for the preservation of nuclear knowledge, and on the construction of the structure of the knowledge base with the greatest involvement of universities and scientific research organizations.

Short Bio:



Vesna Spasic Jokić received the B.Sc., M.Sc., and Ph.D. degrees in electrical engineering from the School of Electrical Engineering, University of Belgrade. For more than 20 years she worked with the Federal Bureau of Measures and Precious Metals as a Head of Ionizing Radiation Metrology Group working on primary standard realization and calibration and participating in numerous key and supplement international intercomparisons of ionizing radiation primary and secondary standards. She worked as a guest worker in BIPM, NPL, PTB, OMH, and PSI. From 2003 was with Vinča Institute of Nuclear Sciences as head radiation protection and on design of proton therapy project at TESLA cyclotron installation as scientific adviser. She is a tenured Professor with the Faculty of Technical Sciences, University of Novi Sad. Also engaged in the Medical Faculty University of Defense and was engaged at the Faculty of Electrical Engineering University of Banja Luka. She is also with the International Atomic Energy Agency as an expert in the field of nuclear knowledge management. She has authored or co-authored more than 200 international journal papers, books, and chapters in international monographs, conference papers, and international projects.