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Modeling and Simulations for Nuclear Science and Engineering Applications

Nuclear Science and Engineering benefits society in many aspects, from emission-free power production, to medical and industrial applications. Modern modeling and simulation (M&S) methods are needed to support effective design and analysis of nuclear systems providing these functions. This talk will introduce diverse research performed in Dr. Petrovic's group for Sustainable Nuclear Power at Georgia Tech. To address the climate change, it is necessary to accelerate deployment of low-emission energy sources and phase out fossil fuels as soon as feasible. Synergistic deployment of innovative nuclear and renewable energy systems is proposed as a viable solution. The talk will also discuss advanced hybrid (deterministic-stochastic) shielding methods, and their potential applications to nuclear power, radiation protection and medicine. Presentation will conclude with discussion of potential collaboration areas.

Bojan Petrovic



Prof. Bojan Petrovic holds a B.Sc. in Mathematics, and Ph.D. in Nuclear Engineering. Since 2007 he has been Professor of Nuclear Engineering at Georgia Institute of Technology. Prior to Georgia Tech, Prof. Petrovic was Fellow Scientist at Westinghouse Electric Company R&D. His main research interests include reactor physics, advanced reactors design, with the overarching theme of the role of nuclear power in sustainable development, as well as applications of nuclear technologies in medical and industrial applications. Prof. Petrovic has been elected Fellow of the American Nuclear Society, and International Member of the Croatian Academy of Engineering. He has authored or coauthored over 350 scientific and technical publications and has given over 50 invited seminars and talks.