

Joint seminar of the NPI of the CAS

24. 10. 2024

Mgr. Vladimír Weinzettl, Ph.D. (Institute of Plasma Physics of the CAS): *The COMPASS Upgrade tokamak – an advanced research project in the context of current progress in thermonuclear fusion*

Abstract:

Although the processes of thermonuclear fusion have ensured life on Earth for billions of years, their physics understanding only began to emerge about 100 years ago. The lecture will very briefly outline the background of thermonuclear research, especially with regard to the magnetic confinement of plasma in tokamak-type devices, and its motivation in the form of future use of fusion in energetics. The main fusion research facilities of recent years will be presented together with their most important results and the plan for the near future will be outlined. The very core of the presentation will be focused on the motivation and implementation of the project to build a new tokamak at the Institute of Plasma Physics of the CAS in Prague, called COMPASS Upgrade. The lecturer will present both the aspects of the necessary upgrade of the existing infrastructure and, in particular, the individual components of the tokamak itself and the systems necessary for its operation. In the final part, selected topics that could be close to researchers from the Institute of Nuclear Physics will be mentioned.