

Faculty of Physics

PHYSICS COLLOQUIUM

Speaker: Prof. Dr. Alfons Khoukaz Institut für Kernphysik Universität Münster



Topic: Jet Targets for Hadron Physics Experiments

 Time and
 Tuesday, June 3, 2025, 2:50 pm – hybrid event

 place:
 The colloquium will be held in REC/C213.

 Online participation possible:
 Zoom-Meeting: Meeting-ID: 631 3817 8900 / passcode: PC-SoSe25

 https://tu-dresden.zoom-x.de/j/63138178900?pwd=TImGawPz1dtDA6VzO2N1XdqqI7bE6b.1

Host: Prof. Daniel Bemmerer

- Abstract: Jet beams are widely used as targets in many fields of physics. Prominent examples are scattering experiments at hadron and lepton accelerators or at terawatt laser facilities, where pure and windowless targets with adjustable thickness are required in vacuum. Depending on the specific experimental situation, different types of targets such as gasjets, cluster-jets or pellet streams can be used to fulfil the required properties. However, in recent years new experimental challenges have emerged that require a significant improvement in the performance of existing target technologies and the development of new target beam generation and monitoring techniques. The MAGIX experiment at the new energy-recovering accelerator MESA and the PANDA experiment, which is to be set up at the proposed HESR storage ring at FAIR, can be mentioned here as examples. Inspired by this, new research projects have been initiated, focusing on the development of state-of-the-art jet targets. This talk gives an overview of the developments on cryogenic gas-jet, cluster-jet and frozen pellet/filament targets.
- *Bio:* Alfons Khoukaz is Professor (Apl.) of Physics and Academic Director at the Institute of Nuclear Physics at the University of Münster. After studying physics in Münster and obtaining his doctorate in Münster in 1996, he was a visiting scientist at the University of Uppsala (Sweden) in 1997. Back in Münster, he received the Venia Legenda in physics in 2002 and set up a research group. His research focuses on hadron physics and the investigation of exotic particle states at storage rings and electron-positron colliders as well as precision experiments at electron accelerators. In addition to participating in these experiments, his group develops highperformance jet targets for various experiments at hadron and lepton accelerators as well as for high-power lasers.

