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Münster Jet Targets for Hadron Physics Experiments

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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 gas-jets, 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 PANDA experiment, which is to be set up at the future HESR storage ring at FAIR, and the MAGIX experiment at the new energy-recovering accelerator MESA 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 droplet targets in Münster.

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