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## Development of bent crystal manipulation systems for beam collimation and extraction at CERN

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Manipulating high energy beams with bent crystals has applications ranging from beam collimation to slow or direct beam extraction. These systems are now integrated parts of accelerators and studied for future experimental set-ups.

With growing achievements and expectations of crystal beam manipulation, requirements for the devices that operate the crystals become more stringent. They must retain the extreme angular precision required by the tight acceptance of crystal channeling. But they also must sustain longer operation, with higher beam energy, and provide additional functions.

In this paper are presented crystal channeling devices in operation or development at CERN. Target Extraction Crystal devices, operated in SPS ring, reduce beam power losses during slow extraction. Target Crystal Primary Collimators are now part of LHC collimation system for ions runs. Finally, two devices are currently developed for dipole moments measurement of short-lived baryons in the LHC.

This paper focuses on the relations between requirements, environment, and design of the different devices. It emphasizes how the specificity of items that share the same principle leads to unique design solutions.

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### Footnotes

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Yes

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