

## Channeling 2018



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# Guiding of Charged Particle Beams in Curved Capillary-Discharge Waveguides

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A new method able to transport charged particle beams along a curved path is presented. It is based on curved capillary-discharge waveguides where the induced azimuthal magnetic field is used to focus the beam and, at the same time, keep it close to the capillary axis. We show that such a solution is highly tunable, it allows to develop compact structures providing large deflecting angles and, unlike conventional solutions based on bending magnets, preserves the beam longitudinal phase space. Such a feature, in particular, is very promising when dealing with ultra-short bunches for which non-trivial manipulations on the longitudinal phase spaces are usually required when employing conventional deflecting devices.

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