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Dual-purpose structure for light and heavy particles

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A dual-purpose structure has been developed for the NICA collider accelerating heavy multiply charged ions and light polarized nuclei of protons and deuterons. For heavy multiply charged ions, it is necessary to solve the problem of intrabeam scattering, which requires minimal modulation of the envelope and dispersion function. For light particles, the problem of crossing transition energy arises. In the proposed structure, both problems are solved due to a specially developed structure of magnetic arcs. This magneto-optical structure can be used to accelerate both heavy ions and light polarized protons and deuterons without loss of beam quality.

Footnotes

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Europe

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