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Impedance Budget of the NICA Collider Ring

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The report presents the results of optimization of the longitudinal coupling impedance of the NICA collider ring using numerical simulation of its individual elements by the CST Studio. Based on the obtained results, analytical estimates of the stability of the ion beam in the ring are obtained for two energy values –1 and 3 GeV/u. To confirm the reliability of the obtained calculations, the longitudinal impedance was measured for a prototype of one of the calculated elements.

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