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Peculiarities of Cherenkov Radiation by a Train of Bunches Moving Inside a Partially Dielectric Loaded Waveguide

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The Cherenkov radiation from train of electron bunches traveling along the axis of a partially dielectric loaded cylindrical waveguide is investigated theoretically. It is shown, that by special choice of the values of problem parameters, it is possible to generate quasi-coherent radiation from bunches in a train, on several waveguides modes simultaneously. A visual explanation of the obtained results is given.

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