

## Channeling 2018



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# Cherenkov-Transition Radiation in a Waveguide with a Semibounded Strongly Magnetized Plasma

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The plasma filled waveguides was of great interest since it was shown that such devices could be useful for the purpose of particle acceleration and development of high power electromagnetic radiation sources. One of the problems consists in analysis of the effect of the transverse boundary on the wave field. Here we consider the case of waveguide loaded with semi-infinite magnetized plasma using a strong magnetic field approximation when the gyration parameter is neglected. We analyze the electromagnetic field of the waveguide mode components analytically and numerically. We give the detailed description of so-called Cherenkov-transition radiation generated in the vacuum area.

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