



Contribution ID: 33

Type: poster

WAKEFIELD PLASMA LENS, PROVIDING HOMOGENEOUS AND IDENTICAL FOCUSING OF TRAIN OF SHORT RELATIVISTIC ELECTRON BUNCHES

Monday, 14 September 2015 20:00 (30 minutes)

Focusing of relativistic electron bunches by wakefield, excited in the plasma, is important and interesting. The focusing of bunches by wakefield, excited in plasma by resonant train of relativistic electron bunches is inhomogeneous. Mechanism of focusing in the plasma, in which all bunches of train are focused identically and uniformly, is proposed and investigated by numerical simulation in. This plasma wake lens for short relativistic electron bunches is studied in this paper analytically and by numerical simulation by code Icode. Unbounded nonmagnetized homogeneous plasma is considered. The rectangular in longitudinal direction bunches (i.e. the bunch current is const along bunch axis) are considered in the fixed their current approximation. We consider a homogeneous focusing of train of short bunches. We show that all bunches of train are focused identically and uniformly.

Primary author: Mrs LEVCHUK, Iryna (NSC Kharkov Institute of Physics & Technology, 61108 Kharkov, Ukraine)

Co-authors: Prof. ONISHCHENKO, Ivan (NSC Kharkov Institute of Physics & Technology, 61108 Kharkov, Ukraine); Prof. MASLOV, Vasyl (NSC Kharkov Institute of Physics & Technology, 61108 Kharkov, Ukraine)

Presenter: Mrs LEVCHUK, Iryna (NSC Kharkov Institute of Physics & Technology, 61108 Kharkov, Ukraine)

Session Classification: Poster Session 1 (WG1-WG2-WG3-WG4) and Wine

Track Classification: WG4 - Application of compact and high-gradient accelerators/Advanced beam manipulation and control