

Creation of intense heavy ion beams with short pulse duration in BRing at HIAF

Dayu Yin*¹, Jiancheng Yang¹, Xiaohu Zhang¹, Lijun Mao¹, Guodong Shen¹, Heng D¹

Institute of Modern Physics, Lanzhou, 730000, China

*Corresponding author: yindy@impcas.ac.cn

HIAF- the High Intensity heavy-ion Accelerator Facility will provide intense heavy ion beams to expand nuclear and related researches into presently unreachable region. Compared to the present HIRFL(Heavy Ion Research Facility in Lanzhou) project, the primary heavy ion beams will increase by a factor of 1000 which will open a new path for the HED physics research in laboratory.

HED physics study requires high quality, well focused, strongly bunched intense particle beams to satisfy the very high energy deposition to achieve high target power density, so,

how to generate such kind of beams will be the issue of this report.

Based on the beam parameters of 238 34' proposed by the BRing at HIAF, the two critical issues are studied. One of them is efficiency of adiabatic capture which can be a necessary prerequisite to improve the beam intensity, and the other one is the method of producing short pulse duration bunch.