

## PRELIMINARY DESIGN AND BEAM DYNAMICS SIMULATION STUDIES OF THE PHOTO INJECTORS FOR EicC

A project for a polarized electron-ion collider in China (EicC) is planned based on the high intensity heavy ion accelerator facility (HIAF), which is currently under construction. According to the electron beam parameters from the white-paper of EicC, two electron injectors are required, one is polarized electron beam for the collider and another one is for the energy recovery linac (ERL) used for the electron cooling (e-cooler) of high energy ions. For the polarized electron beam, a DC high voltage photocathode gun is used; for e-cooler ERL, a quarter wave length resonator (QWR) SRF photocathode gun is considered. The preliminary considerations and designs of both injectors with beam dynamics simulation studies are presented here.

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