

**Simulation Study of the Beam-Photoelectron Instability in BEPC**, H. FUKUMA, Z.Y. GUO\*, K. OHMI, KEK - An experiment study of the beam-photoelectron instability (PEI) has been carried out in Beijing Electron Positron Collider (BEPC) with collaboration between IHEP, China and KEK, Japan. The PEI is a transverse coupled bunch instability in positron beam caused by photo-electron which are produced by synchrotron radiation. This instability has been surveyed at the different parameters such as charge of the beam, bunch spacing, beam energy and so on in the experiments. The photoelectron distribution, the behavior and the damping time of the bunch oscillation under the experiment conditions have been analyzed and simulated using the computer code developed to study this process. The results of simulation with the comparison to the observation are summarized in this paper.

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