

The Proposed Experimental Study of the Beam Photo-Electron Interaction at BEPC, Z.Y. GUO, D.K. LIU, C. ZHANG, IHEP, Y.H. CHIN, H. FUKUMA, S. KUROKAWA, KEK - A vertical collective effect called photo-electron instability (PEI) has been observed at Photon Factory of KEK. This phenomena may set a limitation on the performance of the proposed B Factories or T-c Factories. An experimental study has been planed using a positron beam at BEPC under the collaboration between IHEP and KEK. Preliminary simulation results show that the PEI may occur in BEPC at the total beam level of 40 mA over more than 20 bunches. The simulation code is under development to take the vacuum chamber and other effects into account. The instrumentations for observation of PEI are prepared by both IHEP and KEK. The spectrum analyzer with 3 GHz band width, the streak camera, the single pass beam position monitor and other normal diagnostic instrumentations are being set up at BEPC. The machine study has been scheduled in 1996 and the experiment will be progressed under the conditions of the best machine performance. It is expected that the phenomena and the mechanism of PEI will get more clear after the analysis of experiment.