

**Electron Beam Diagnostics Using Bremsstrahlung at Electron-Proton Collider, YU.A. BASHMAKOV, M.S. KORBUT , P.N. Lebedev Inst., Moscow** - At an electron-proton collider electromagnetic interaction of electrons with counter protons produces bremsstrahlung. Now this radiation is widely used for collider luminosity measurement. Bremsstrahlung photons distribution can be used also for measurement of electron beam divergence at an interaction point. Comparison of bremsstrahlung angular distribution and electron beam angular spread is given for energy range typical for the electron-proton collider HERA. The counter proton beam is a strongly inhomogeneous target. It makes possible determination of relative position of electron and proton bunches at the interaction point in the transverse plane. Experimental data for the photon and the electron hodoscopes of the luminosity monitor of the H1 Detector at the electron-proton collider HERA were used for electron beam parameters extraction. There are experimental evidences that coherent interactions between electron and proton bunches can essentially change the second electron angular distribution.