

A Method of the Polarized Positron Beam Production, E.G. BESSONOV, Lebedev Phys. Inst. of the Russian Academy of Sciences, Moscow, Russia; A.A. MIKHAILI-CHENKO, BUDKER INP, Novosibirsk, Russia - The longitudinally polarized positrons can be produced by the conversion of circularly polarized photons in a matter. The problem is in the production of hard (energy >10 MeV) circularly polarized photons. Effective sources of such photons discussed up to recent time is the undulator radiation sources based on high energy (~ 100 GeV) electron beams and long (~ 100 m) undulators and the sources of backward Compton scattered photons based on intermediate energy (~ 1 GeV) storage rings and powerful lasers [1]. In this paper the production of the longitudinally polarized positron beams is discussed when the sources of the circularly polarized photons are based on the bremsstrahlung of the longitudinally polarized electrons in a matter [2]. Low energy (~ 100 MeV) linear accelerators and an electron guns producing high degree longitudinally polarized electron beams are necessary in this case.

- [1] E.G. Bessonov, Proc. VI Int. Workshop on Linear Colliders, Tsukuba Center for Institutes, March 27-31, 1995.
- [2] H. Olsen, L. Maximon, Phys. Rev., 1959, 114, 887.