

Radiative corrections and new-physics searches at e^+e^- colliders

A.A. Babich and A.A. Pankov

Department of Mathematics,
Pavel Sukhoy Gomel State Technical University,
Oktyabrya prospect 48, 246746 Gomel, Belarus,
Fax: + 375-232-479165;
E-mail: babich@gstu.belpak.gomel.by
pankov@gstu.belpak.gomel.by

For the processes $e^+e^- \rightarrow \mu^+\mu^-, b\bar{b}$ and $c\bar{c}$ at a future e^+e^- linear collider (LC) we examine the role of the photonic corrections on the sensitivity of the helicity cross sections to four-fermion contact interactions. The observed cross sections is significantly distorted in shape and magnitude by the emission of real photons by the incoming electrons and positrons. In particular, due to the radiative return to the Z resonance at $\sqrt{s} > M_Z$, the energy spectrum of the radiated photons is peaked around $k_{\text{peak}} \approx 1 - M_Z^2/s$. In order to increase the signal originating from contact interactions we impose the cuts on the kinematical parameters to eliminate the events with hard photons.

Experimental status of dipole and spin polarizabilities of nucleons

M.I. Levchuk

B. I. Stepanov Institute of Physics,
Belarus National Academy of Sciences
F. Scoryny prospect 70, 220072 Minsk, Belarus
Fax: + 375-172-2840879
E-mail: levchuk@dragon.bas-net.by

Recent progress in experimental study of the dipole and spin polarizabilities of nucleons is discussed. It is noted that the dipole proton polarizabilities have been successfully found in a series of experiments on γp scattering which yielded quite an accurate result $\bar{\alpha}_p =$