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Polarimetry at the Positron Source of the ILC

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With the ILC baseline design polarized positrons will be delivered.

To optimize and control the positron beam, also the polarization measurement close to the creation point is recommended.

Taking into account the positron beam parameters at the source, possible methods for polarimetry include a Compton transmission polarimeter (directly downstream the capture section) and a Bhabha polarimeter (operated at few hundred MeV).

Alternatively, the polarization can be measured using a Compton polarimeter after positrons passed the damping.

Fast reversal of positron helicity is recommended but not essential for polarimetry at the source. However, it is decisive for precision measurements at the IP and will be discussed shortly.

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