

e^- source on e^+ side for commissioning and later use for e^-e^- and $\gamma\gamma$

An electron source is needed.

The e^- source in the positron arm is required for commissioning of the damping ring and beam transport through the linac. The main advantage of the electron beam is its lower emittance. The lower emittance will help to understand the true features of the damping ring and in general enable the study of the emittance transport to the IP. In order to enable such tests the polarity of the damping ring and other dipoles should be switchable within hours.

Comparison of damping ring studies with that for positrons will help to pinpoint ecloud effects in this ring (even though a similar ring is available in the electron arm). In general, the availability of electrons may be useful whenever the charge of the beam helps to disentangle distortions.

Electrons are readily available (as part of the keep-alive source). The intensity requirements depend on the planned studies and should be variable.

For e^-e^- a high intensity source will be required to achieve reasonable luminosity. It probably should be polarized.

For $\gamma\gamma$ a high intensity, very low emittance electron source is required. The yield can be improved with polarized electrons and a circularly polarized laser.