

Progress in the center-of-mass energy calibration and monochromatization at FCC-ee

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The CERN Future Circular electron-positron Collider (FCC-ee) will enable extreme precision physics experiments from the Z-pole up to above the top-pair production threshold. Very precise beam energy measurements will be performed by resonant depolarization (RD) of e⁺ and e⁻ pilot bunches, using novel 3D-polarimeters. Additional measurements will be needed to reduce the center-of-mass energy uncertainty to the level of the statistical precision of 4 keV (m_Z, Γ_Z) and 250 keV (m_W) expected for key Standard Model parameters. In addition, monochromatization of the beams, down to a few MeV, is necessary to observe the resonant s-channel e⁺e⁻ → H(125) production; of which a first optics implementation has been achieved.

Alternate track

I read the instructions above

Yes

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