

The Dynamic Aperture of LEP at High Energy,
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CERN, Y. ALEXAHIN, PPL JINR - At the highest
operating energies of LEP, the beam occupies a large
phase space volume (emittances) because of the strong
synchrotron radiation effects. The stable phase space
volume required is comparable to the dynamic aperture,
itself in large part determined by radiative effects such
as beta-synchrotron coupling. Tune-dependences on
the three oscillation amplitudes are also important. We
review the present understanding of the physics
determining the dynamic aperture, the computational
techniques used to determine it and their relation to the
most recent measurements. Improvements in dynamic
aperture can be achieved by a variety of means
including changes of optics, tunes, multipole correctors
and the RF voltage distribution.