

A Proposed Booster Synchrotron for the LSB,
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Barcelona, Bellaterra, Spain - The design of a booster
synchrotron for the LSB machine is presented. It
should take the electrons from the energy of 100 MeV
at the exit of the pre-accelerator to the nominal energy
of the storage ring, that is 2.5 GeV. The main
requirement for the booster is that it should provide a
good injection efficiency to the storage ring. That
requires a booster with a relatively low emittance,
relatively small beam size at extraction (low β_x and β_y ,
and zero dispersion) and an adequate harmonic number.
A booster that fulfils the above requirements and that
allows space for injection, acceleration and extraction
will be presented. Detailed designs of the booster
magnets: dipoles, quadrupoles and sextupoles; as well
as of the RF system will be also presented.