**Space charge suppression for flat beams**

**Abstract:**

Use of circular modes in the injectors with their transformation into planar modes in the collider allows both the space charge and beam-beam luminosity limitations to be significantly reduced, if not practically eliminated.

**Summary:**

Having a beam with emittance ratio ~10 or higher allows to get rid of long-range collisions in the LHC, to increase its luminosity, to reduce the aperture in the IR triplet, eliminate a need in the crab-cavity, and make the beam more stable.

A. Burov, Phys. Rev. ST Accel. Beams 16, 061002, 2013 and refs therein.