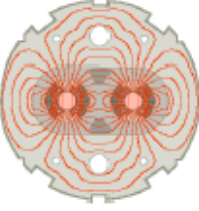




What has to be done in each phase?



- Procedures elaborated within the **LHC Commissioning Working Group** (LHCCWG) in preparation for the 7 TeV operation.
- Updated now for the 3.5 TeV scenario
- Particular careful for machine protection aspects!

Phase A.1	First turn: injection commissioning; threading, commissioning instrumentation. Ring 1, ring 2.
Phase A.2	Circulating pilot: establish circulating beam, closed orbit ...
Phase A.3	450 GeV initial commissioning: system commissioning beam dump,...
Phase A.4	450 GeV optics: beta beating, dispersion, coupling, non-aperture,...
Phase A.5	450 GeV, increasing intensity: prepare the LHC for uns
Phase A.6	450 GeV, two beam operation
Phase A.7	450 GeV, collisions
Phase A.8	Snap-back and ramp: single beam/two beams
Phase A.9	Top energy checks
Phase A.10	Top energy, collisions
Phase A.11	Squeeze: Commission the betatron squeeze in all IP's
Phase A.12	Beam commissioning with experimental magnets

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Beam Commissioning Procedure

**LHC COMMISSIONING WITH BEAM:
PHASE A.11 (BETATRON SQUEEZE)**

Abstract

This document describes the LHC beam commissioning procedures for the betatron squeeze at 7 TeV in all IP's without crossing angle. It covers the entry conditions, the commissioning procedures and exit conditions of this phase. Possible problems and open questions are also listed.

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