AMT - Beam generated heat deposition and quench levels for LHC magnets



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Transient beam losses at injection and during beam dump

The injection and beam dump processes are designed to avoid any beam losses. However, situations will occur in which these processes are not carried out correctly, for instance with out of tolerance beam characteristics, wrong settings or equipment failures. In these cases beam losses can occur. Damage to accelerator equipment should be prevented by the Machine Protection systems, but it will not be possible to avoid quenches in all cases. The catalogue of different beam losses mechanisms is presented, with a summary of the studies made to date, the expected occurance rate and a discussion of outstanding areas of concern.

Author:Dr GODDARD, Brennan (CERN)Co-author:KAIN, verena (cern)Presenter:Dr GODDARD, Brennan (CERN)

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