

Abstract Submitted  
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**AC losses in conventional and block coil geometry superconducting dipoles**<sup>1</sup> ALFRED MCINTURFF, PETER MCINTYRE, AKHDIYOR SATTAROV, Department of Physics, Texas A&M University — The upgrade of injection synchrotrons of LHC requires pulsed magnets reaching 5T with a ramp rate of the order of 1-2T/s. AC losses in the magnets are the major concern. A standard method of AC loss evaluations underestimates experimental results in the critical high field region. A modified method used to estimate AC losses in GSI001 model magnet tested recently at BNL gave an excellent agreement with the experimental results. Both methods were applied to analyze recent designs of a cosine current distribution and block-coil geometry superconducting dipoles. We find that the simple and robust block-coil geometry dipole over performs conventional one in both: reduced AC losses and less amount of superconducting wire.

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