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Thermal stability of the Diamond storage ring

Wednesday 17 September 2025 17:00 (1 hour)

This presentation explores the thermal stability of the Diamond storage ring, highlighting significant air temperature variations both spatially and temporally. To monitor component temperatures, 34 Pt1000 temperature sensors have been installed across three girders within the same cell. Observations indicate a 0.5°C increase in girder temperature during machine startup, primarily due to a rise in magnet temperature of up to 2.5°C when powered, while beam presence has minimal impact on machine temperature. This data has been instrumental in informing the development and analysis models for Diamond-II. Additionally, sensors installed on two Diamond EBPM columns provide targeted analysis to enhance Diamond-II beam stability.

Footnotes

Funding Agency

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