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Estimation of impedances and corresponding instabilities in Korea-4th generation storage ring

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Due to the small vacuum apertures, impedance serves as a significant cause of beam instabilities in the 4th generation storage ring. These instabilities are directly affected by the bunch charge, thereby placing a limit on the maximum achievable beam current within the storage ring. The Korea-4th generation storage ring (Korea-4GSR) is currently under construction with the aim of reaching a maximum beam current of 400 mA. To meet this goal, we've conducted estimations and optimizations of the current storage ring's impedance. In this presentation, we show the impedance of Korea-4GSR and the corresponding instabilities.

Footnotes

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Primary author: SEOK, Jimin (Pohang Accelerator Laboratory)

Co-authors: LEE, Jaeyu (Pohang Accelerator Laboratory); HA, Taekyun (Pohang Accelerator Laboratory); Dr KIM, Jaehyun (Pohang Accelerator Laboratory); JANG, Gyeongsu (Pohang University of Science and Technology); CHOI, Hosun (Pohang Accelerator Laboratory)

Presenter: SEOK, Jimin (Pohang Accelerator Laboratory)

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