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Toward a new era of spin-polarized electron beams at SuperKEKB

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The SuperKEKB accelerator is currently in operation in Tsukuba, Japan, with a planned long shutdown in 2026. Among the possible upgrades being considered during this period is the change to a polarized electron beam in the High Energy Ring. Such a change would require modifications in the source generation and transport, geometrical and lattice variations to provide spin rotation, and polarimetry. A Polarized SuperKEKB Working Group has been formed from members of the Belle II experiment and the SuperKEKB accelerator team to investigate the possibilities and challenges of these modifications. This talk lays out the goals of the proposed upgrade, considers the necessary changes to the existing accelerator and their feasibility and lays out the physics motivation behind such an effort.

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Footnotes

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