

eeFACT 2025 - 70th ICFA Advanced Beam Dynamics Workshop on High Luminosity Circular e⁺e⁻ Colliders



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High Efficiency klystrons for future colliders

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High-efficiency klystrons are a key component for the operation of next-generation particle colliders such as the Future Circular Collider - electron-positron (FCC-ee), the Compact Linear Collider (CLIC), the Large Hadron Collider (LHC), and the Circular Electron Positron Collider (CEPC). These high-power RF sources provide the essential energy required for particle acceleration and beam focusing, which are critical for achieving high luminosity and precision in particle collision experiments. High-efficiency klystrons address this growing demand by offering more power output while reducing energy loss, contributing to both the cost-effectiveness and stability of collider operations. The development of high-efficiency klystrons is central to the success of future colliders. These klystrons are designed to achieve efficiencies greater than 80%, pushing technological boundaries.

Footnotes

Funding Agency

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Author: ZHOU, Zusheng (Institute of High Energy Physics)

Presenter: ZHAI, Jiyuan (Institute of High Energy Physics)

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