

ICALEPCS 2025 - The 20th International Conference on Accelerator and Large Experimental Physics Control Systems



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Time served - a look at the past, present, and future of timing at Fermilab

Tuesday 23 September 2025 16:00 (1h 30m)

This presentation covers the history of Fermilab's Tevatron Clock (TCLK) timing system and how it has served to regulate the facility over the past 40 years. The presentation provides an overview of beamlines at Fermilab, the challenges of timing in a Rapid Cycling Synchrotron, and the transfer scenarios utilized to generate megawatt-class beam at America's "premier" high energy physics laboratory!

The PIP-II project introduces additional challenges in the timing of Fermilab. Over the past 5 years, the Controls group has seized this opportunity to modernize, and is actively in development of an upgraded Accelerator Clock (ACLK) timing system to meet stringent performance demands. This new implementation vastly improves the real-time control and synchronization capabilities of the facility, supporting beam synchronous operation from LBNF and beyond!

Footnotes

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