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Title: „Addressing Energy Responsibility in Particle Accelerators: Insights from the KITTEN Research Platform”

Abstract: “Particle accelerators are known for their high energy consumption and dependence on stable energy supply. The KITTEN (KIT Test Center for Energy Efficiency and Network Stability) test center addresses these challenges by exploring and implementing innovative solutions to optimize energy use in accelerators.

This presentation highlights the latest advancements from our research at the Karlsruhe Institute of Technology. We will introduce a novel open-access monitoring board designed to track accelerator energy consumption, showcasing its transformative potential. Additionally, we will share preliminary results from our high-bandwidth measurement and communication infrastructure, crucial for developing digital twins of accelerators. Future research directions and upcoming projects will also be outlined.”