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Energy Sustainability in Artificial Intelligence

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The rapid advancement of artificial intelligence (AI) technologies is driving transformative changes across various sectors, including High Energy Physics (HEP). While the energy consumption associated with AI systems poses a challenge to sustainability, the integration of AI within HEP offers significant benefits in terms of efficiency and modernization of the HEP computing model. This talk addresses the critical issue of energy sustainability in AI, focusing on the factors contributing to its high energy usage, such as the computational intensity of deep learning algorithms. In response to these challenges, several strategies can be identified to reduce AI's energy footprint. These include the design of optimal deep learning architectures, the implementation of advanced model training techniques and the use of energy-efficient hardware.

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