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Perspectives of Model Predictive Control in high energy physics experiments

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The objective of this work is to shortly present Model Predictive Control (MPC) algorithms and to discuss their possible applications in high energy physics experiments. Firstly, the idea of MPC, its advantages and a few MPC formulations are discussed. The unique possibility of controlling complex multiple-input multiple-output processes with constraints is emphasised. Secondly, example possible applications of MPC in high energy physics experiments are discussed and a perspective of using MPC for the Nuclotron-based Ion Collider fAcility (NICA) accelerator is given.

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