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Beam orbit tuning via reinforcement learning at FELiChEM

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The online optimization and debugging of particle accelerator devices have always been a challenging task. Traditional manual debugging is time-consuming and labor-intensive, and there is a phenomenon of slow drift in the machine's operating state after debugging, requiring experts to repeatedly debug. With the improvement of computing power, machine learning has developed rapidly in recent years, making it possible to train more complex models. Deep reinforcement learning models, as intelligent agents, have the ability to interact with the actual environment and learn the best strategies. By interacting with the FEL environment through deep reinforcement learning models, automatic debugging of FEL can be achieved

Footnotes

Paper preparation format

Region represented

Asia

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