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Intelligent online optimization in X-ray free-electron lasers

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In the commissioning and operational stage of X-ray free-electron lasers (XFELs), it is a challenging problem to efficiently tune the large-scale scientific machines which consist of hundreds and thousands of components. Here we tried to introduce several tuning algorithms to achieve automatic tuning in XFELs and compared the performance. This also paves the way for further development of intelligent online optimization schemes.

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Footnotes

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