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Applications of Machine Learning for RF Systems

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The application of machine learning to accelerators has been a dinner table discussion amongst members of the community with an ever increasing list of application spaces. ML has successfully been applied to the improvement of diagnostics, on-line modeling, anomaly detection, and postmortem data analysis. When it comes to accelerator RF systems, machine learning has been of most interest for improving superconducting systems and quench detection / protection systems. Given modern hardware infrastructure, these only scratch the surface of potential applications. This talk will provide an overview of recent applications of machine learning technologies for both slow-controls and real-time systems and highlight some opportunities for the integration of machine learning techniques for the improvement of control systems for RF structures.

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