



Contribution ID: 38

Type: **Standard Talk**

Fast Machine Learning for accelerator control

Tuesday 26 September 2023 09:00 (45 minutes)

The European Spallation Source (ESS) is multi-disciplinary research facility based on neutron scattering under construction in Lund. The facility includes a superconducting linear proton accelerator, a rotating tungsten target wheel where neutrons are spalled off by the high energy protons and a suit of instruments for neutron scattering experiments.

ESS is a user facility designed and built for external scientists who will visit ESS after the start of the user program in 2027. Reliability and availability are therefore of major concern, and challenging since accelerator-based research facilities in general are very complex. In addition, the ambition to be the world's first sustainable research facility emphasise the importance of operational efficiency. This has motivated us to initiate a Control System Machine Learning (CSML) project to explore how machine learning methods developed in other fields such as natural language processing, image analysis and robotics, can be applied to the control system. In this talk the outcome of this project will be presented together with examples, lessons learned and a road map into the future for accelerator controls.

Primary author: RATHSMAN, Karin (European Spallation Source)

Presenter: RATHSMAN, Karin (European Spallation Source)

Session Classification: Invited Talks

Track Classification: Invited Talks