Contribution ID: **26** Type: **Presentation**

# Strong Hadron Cooling in EIC with an ERL

*Wednesday, 5 October 2022 09:10 (20 minutes)*

IntraBeam Scattering (IBS) and other diffusion mechanisms in the EIC Hadron Storage Ring (HSR) degrade the beam emittances during a store, with growth times of about 2 hours at the two nominal proton energies of 275 GeV and 100 GeV. Strong Hadron Cooling (SHC) maintains good beam quality and high luminosity during long collision stores. A novel cooling method – Coherent electron Cooling (CeC) – is chosen as the baseline SHC method, due to its high cooling rates. An Energy Recovery Linac (ERL) is used to deliver an intense high-quality electron beam for the cooling. In this talk, we discuss the beam requirements for SHC-CeC in HSR and describe the current status of the ERL design, as well as the challenges and the R&D topics that are being pursued.

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**Session Classification:** Uses and Applications

**Track Classification:** Uses and Applications