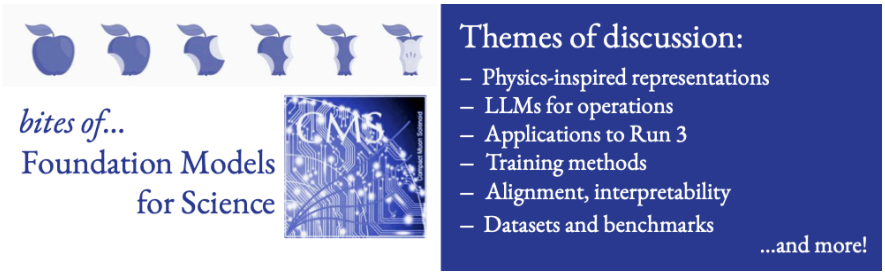


Contribution ID: **5** Type: **not specified**

# You can observe a lot by just watching (new AI strategies for the LHC and beyond)

*Wednesday 20 November 2024 15:50 (50 minutes)*

With large amounts of data, a Higgs boson discovery, and world-leading constraints on an enormous amount of parameters and interactions, the Large Hadron Collider has been a phenomenal tool. We show new results built on contrastive learning and semi-supervised learning strategies where, through physics-motivated choices, we teach an AI to visualize many processes simultaneously, allowing it to solve a variety of downstream tasks in one algorithm. The implications are far-reaching. We discuss how this style of learning broadly allows us to simplify problems, and we point to new directions in representation learning that aim to further unite physics with ML.

**Presenter:** HARRIS, Philip Coleman (Massachusetts Inst. of Technology (US))