**Heterogeneous Data and Large Representation Models in Science**

Contribution ID: **35**                                         Type: **Oral presentation**

# Keynote Address: Medium Range Weather Forecasting with Machine Learning

*Wednesday 2 October 2024 16:50 (45 minutes)*

The recent emergence of quality data, large scale compute and deep learning advancements has enabled an acceleration in the field of Machine Learning for Weather Forecasting. Today's talk centers on two pieces of work: GraphCast and GenCast, both Medium Range Global Weather Forecasting models. The former produces deterministic forecasts up to 10 days into the future, while the latter makes probabilistic forecasts, up to 15 days into the future. We cover: their state of the art results compared to the most accurate operational equivalents, explore subtle aspects of their training data heterogeneity and discuss the role they play as we move towards larger weather models.

## Contribution length

Long

**Authors:**    MEROSE, Alexander (Google DeepMind);  PRITZEL, Alexander (Google DeepMind);  SANCHEZ--GONZALEZ, Alvaro (Google DeepMind);  EL-KADI, Andrew (Google DeepMind);  MASTERS, Dominic (Google DeepMind);  ALET, Ferran (Google DeepMind);  HOLLAND, George (Google DeepMind);  PRICE, Ilan (Google DeepMind);  STOTT, Jacklynn (Google DeepMind);   WILLSON, Matthew (Google DeepMind);   FORTUNATO, Meire (Google DeepMind);  VINYALS, Oriol (Google DeepMind);  BATTAGLIA, Peter (Google DeepMind);  WIRNSBERGER, Peter (Google DeepMind);  LAM, Remi (Google DeepMind);  MOHAMED, Shakir (Google DeepMind);  HOYER, Stephan (Google DeepMind);  RAVURI, Suman (Google DeepMind);  EWALDS, Timo (Google DeepMind);  ANDERSSON, Tom (Google DeepMind);  HU, Weihua (Google DeepMind);  EATON-ROSEN, Zach

**Presenter:**    EL-KADI, Andrew, on behalf of the GraphCast team and GenCast team from Google DeepMind (Google DeepMind)