

Data Assimilation & ML Training Course Q&A

Data Assimilation & Machine Learning

- Our goal this week has been to provide you with a structured introduction to current DA and ML methods for Earth System assimilation and an overview of their main application areas in operational NWP
- Did we succeed? Your feedback will help shape the structure of this TC for the future
- Using Machine Learning techniques is becoming common in DA as in other parts of the NWP workflow and there was an effort to represent this in the TC
- However, DA is based on a solid Bayesian framework: we use ML to enhance DA

Data Assimilation & Machine Learning

- Where to look for material about current topics and discussion:
 - ECMWF Annual Seminar 2018: Earth System Assimilation (<https://www.ecmwf.int/en/learning/workshops/annual-seminar-2018>)
 - ECMWF Annual Seminar on Observations (2021) (<https://events.ecmwf.int/event/217/>)
 - ECMWF Annual Seminar on Reanalysis (2023) (<https://events.ecmwf.int/event/326/>)
 - ECMWF Annual Seminar 2025, with dedicated Data Assimilation Workshop (<https://events.ecmwf.int/event/428/>)
 - ECMWF Annual Seminar 14-18 Sep. 2026. DA, Observations, ML (<https://events.ecmwf.int/event/513/>)

Data Assimilation & Machine Learning

- Where to look for material about current topics and discussion:
 - ECMWF-ESA Workshops on Machine Learning for Earth System Observation and Prediction (2020/1/2; presentations online)
 - Latest edition at ESA-ESRIN (Rome), 7-10 May 2024 (<https://www.ml4esop.esa.int/>)
 - Forthcoming edition in Bologna 13-17 April 2026 (you can still register for online attendance at <https://events.ecmwf.int/event/488/>)

Data Assimilation & Machine Learning

- Where to look for material about current topics and discussion:
 - International Symposium on Data Assimilation (ISDA): quasi-yearly in person event
 - Bologna, 16-20 Oct 2023; <https://eventi.unibo.it/isda2023>)
 - Kobe, 21-25 Oct 2024; <https://www.data-assimilation.riken.jp/isda2024/#15/34.65479/135.22148>
 - Melbourne, 29 Sep - 3 Oct 2025: <https://isda2025melbourne.au/>
- International Symposium on Data Assimilation Online (running series with various thematic events: <https://isda-online.univie.ac.at/>)

Thank you!

Questions?