

Advances toward integrated AI/ML and data assimilation for operational forecasting

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We look at the intersection between AI/ML and data assimilation, and advance various methods to integrate AI/ML in the data assimilation cycle, including surrogate AI/ML models that emulate dynamics (Platt et al., 2021/2022), the generation of AI/ML-based ensemble forecasts to produce forecast error covariance estimates and the integration of these AI/ML forecasts with data assimilation (Penny et al., 2022) and a neural network based estimation and correction of systematic forecast errors (Chen et al., 2022). Current progress and outstanding issues will be discussed.