Zhu–Machine Learning for efficient prediction of high spatial resolution NO_2 a priori profiles

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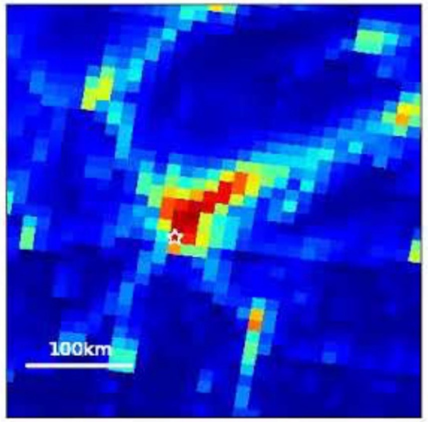
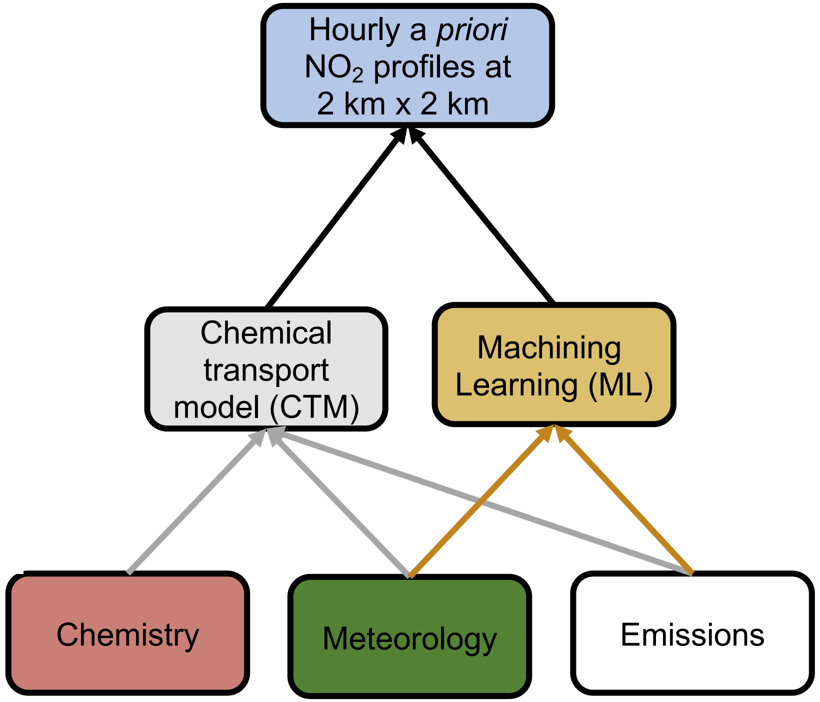
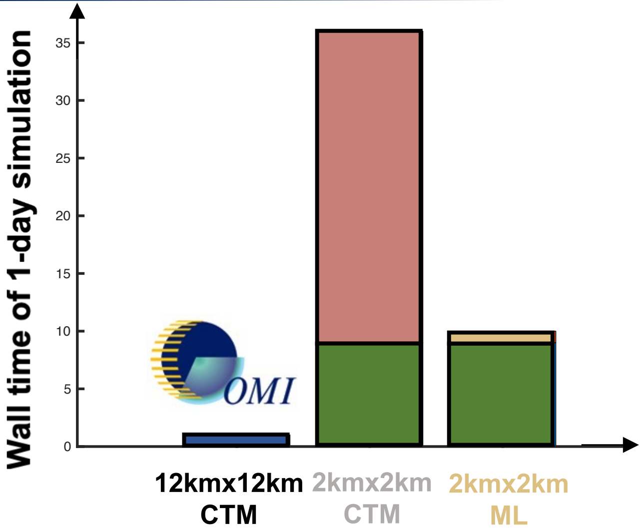
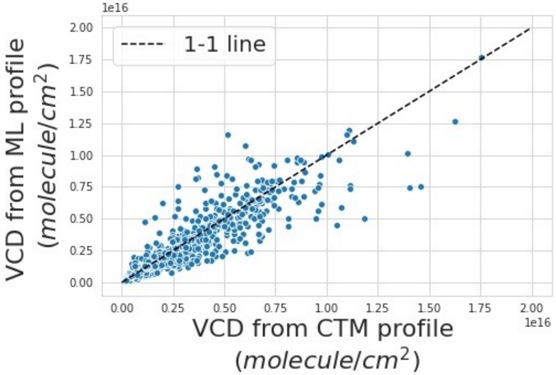






1. Accurately interpreting TEMPO NO_2 observations requires *a priori* profiles at both high spatial and high temporal resolution.

2. NO_2 *a priori* profiles are typically generated using a computationally expensive chemistry transport model. Here we propose using machine learning on a high-resolution meteorological forecast/analysis and an emissions inventory.



3. Machine learning is a computationally efficient method, and the predictions yield a good agreement.