Recent Applications in Representer-Based Dual – Formulation Variational Data Assimilation Methods

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Data assimilation with representer-based algorithms (also called "physical space" or "dual space" algorithms) are currently being used for weak constraint four-dimensional variational data assimilation (W4D-Var) atmospheric prediction, distributed parameter estimation, and other hydrodynamic
data assimilation problems. Recent developments emphasize the adjoint-based observation impact monitoring system, optimizing error covariance models, and improving solver efficiency. This talk reviews recent developments and highlights applications in atmospheric prediction.