1163-60-1238 **Michal Branicki*** (m.branicki@ed.ac.uk), Department of Mathematics, University of Edinburgh, Edinburgh, United Kingdom, and **Animikh Biswas** (abiswas@umbc.edu), Department of Mathematics & Statistics, University of Maryland Baltimore County, Baltimore, MD. *Data assimilation for dissipative PDEs based on approximate Gaussian filters and sparse time-varying sets of nodal observations.* Preliminary report.

Key challenges in data assimilation for PDE-driven dynamics stem from model error in the approximate finite-dimensional forward dynamics, as well as sparse space-time observations. We consider a prototypical time-sequential Bayesian technique, 3DVAR, known to be accurate for filtering dissipative systems with a suitably inflated 'background' covariance and spectral observations when enough low frequency modes are observed independently. We derive rigorous criteria for the accuracy of 3DVAR estimates from spatially sparse and noisy observations which inevitably alias the dynamics of the spectral modes; moreover, we consider situations where the observation operator accounts for evolution of the set of observation locations and it has a time-dependent rank. (Received September 15, 2020)