Contribution ID: **32** Type: **Oral presentation**

Application of the BUMP library in the SOCA system

Tuesday, 18 May 2021 16:20 (20 minutes)

The BUMP library (B matrix on an Unstructured Mesh Package) is a core component of the JEDI project (Joint Effort for Data assimilation Integration), lead by the JCSDA. Using ensembles of forecasts, this generic tool can estimate parameters for various background error covariance models (static, localized ensemble, hybrid), and it also implements their efficient application to a vector. It can work on any kind of horizontal grid and handle complex boundaries, which makes it useful for ocean DA systems. The first part of this talk is a description of BUMP, its motivations, capabilities and implementation strategies.

The JCSDA has also developed a MOM6 interface to the JEDI project, which is currently being implemented within the UFS at NOAA for global and regional initialization of the ocean and cryosphere. It is also being implemented at the GMAO within a weakly coupled DA system targeting reanalysis and NWP forecast initialization. The workhorse static B matrix used for these implementations is based on parameterized background error and simple balance operators for the modeling of cross-covariances. The purpose of this study is to design and test a suite of covariance models based on newly available features in BUMP. The above mentioned covariance model is tested against the current configuration of the JCSDA ocean and sea ice reanalysis system over a period of several months. The metrics of comparison include observation space statistics of innovations as well as standard ocean and ice diagnostics.

Which theme does your abstract refer to?

Not sure

Primary authors: MÉNÉTRIER, Benjamin (IRIT - JCSDA); Mr VERNIERES, Guillaume (JCSDA); Mr SLUKA, Travis (JCSDA)

Presenter: MÉNÉTRIER, Benjamin (IRIT - JCSDA)

Session Classification: Theme 7: Recent assimilation infrastructure developments

Track Classification: Recent assimilation infrastructure developments