

CSET science overview

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Evaluation underpins the development cycle of our Regional Atmosphere Land (RAL) science configurations used across a range of deterministic and probabilistic applications and underpins the use of RAL science for a variety of research areas across the Momentum Partnership. A robust approach to model evaluation is essential in supporting the efficient and useful delivery of continuous RAL development cycles.

The convective and turbulence-scale evaluation toolkit CSET will be the core engine of evaluation tools supporting RAL configurations (UM and LFRic-based) in research environments and we envisage it as the go to place for researchers to develop and use evaluation tools for convective scale and turbulence-scale modelling systems. CSET aims to better align convective-scale evaluation tool development with parametrisation development linked to RAL suites. It focusses on providing and developing process-based diagnostics to understand the physical processes behind biases in our RAL suites. It aligns with operational verification through use of METplus to support PS and RAL3-LFRic testing and supports ensembles from the start.

CSET is built on a modern software stack and provides scientific peer review for developers. It is being developed as a community tool providing a legacy for diagnostics and interfaces to research observations. This talk will give an overview of CSET's design principles and current and future capability.