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Coupled data assimilation opportunities and challenges

Friday, 28 February 2020 14:15 (1 hour)

At ECMWF, we are striving to move towards an Earth System approach to our data assimilation techniques. We currently have models not only of the atmosphere, but of the ocean, the land surface, sea ice, waves, and atmospheric composition. These systems interact with each other in different ways and all need to be initialised through the incorporation of observational data.

The aim of this lecture is to recognise the benefits and challenges associated with data assimilation in coupled models.

By the end of the lecture the participants should be able to:

• Recall the challenges associated with variational data assimilation in systems with different timescales and computer codes.
• Describe the benefits of having more consistently balanced coupled systems from coupled data assimilation.
• Explain the differences between weakly and strongly coupled data assimilation approaches.
• Discuss the various methods that are in use at ECWMF and explain the planned developments of the systems.

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