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## Parametrization and data assimilation

*Thursday, 27 February 2020 10:45 (1 hour)*

This one-hour lecture will identify the challenges associated with the use of physical parametrizations in the context of four-dimensional variational data assimilation (4D-Var). The importance of the linearity constraint in 4D-Var and the methods to address it will be detailed. The set of linearized physical parametrizations used at ECMWF will be briefly presented. Examples of the use of physical parametrizations in variational data assimilation and its impact on forecast quality will be given.

By the end of the lecture, the students should be able:

- to tell why physical parametrizations are needed in data assimilation.
- to recognize the importance of the regularization of the linearized code

**Presenter:** LOPEZ, Philippe (ECMWF)