

## Virtual training course: Advanced numerical methods for earth system modelling



Contribution ID: 11

Type: **not specified**

### Reduced precision computing for Earth System modelling

*Wednesday, 11 March 2020 10:30 (1 hour)*

The aim of this session is to understand how numerical precision can be traded against computational performance in Earth System modelling. It will be discussed how a reduction in numerical precision will influence model quality and how the minimal level of precision that will still allow simulations at high accuracy can be identified. We will give an overview about existing hardware options to adjust numerical precision to the need of the application.

By the end of this session you should be able to

- describe how rounding errors will impact model simulations that show chaotic dynamics
- describe the connection between numerical precision, computational performance and predictability
- recall how a trade-off between precision and performance can be realised in Earth System modelling today and in the future

**Presenter:** HATFIELD, Sam (ECMWF)