



TRAINING COURSE

Advanced Numerical Methods for Earth-System Modelling

16–20 April 2018

	Monday 16 April	Tuesday 17 April	Wednesday 18 April	Thursday 19 April	Friday 20 April
09:15-10:15	Introduction Andy Brown, Sarah Keeley	Mesh adaptivity using continuous mappings Christian Kühnlein	The spectral transform method Andreas Müller	Algorithms for semi-implicit integrations of non-hydrostatic PDEs of atmospheric dynamics (II) Piotr Smolarkiewicz	Practical Session: Advection schemes W. Deconinck, C. Kühnlein, M. Diamantakis
10:15-10:45	<i>Coffee break</i>				
10:45-11:45	Numerics + Discretization in NWP today Nils Wedi	Introduction to semi-implicit integrations of non-hydrostatic PDEs of atmospheric dynamics Piotr Smolarkiewicz	Practical Session: Spectral transform method Andreas Müller	Practical Session: Elliptic Solver W. Deconinck, C. Kühnlein, A. Müller	Practical Session: Advection schemes W. Deconinck, C. Kühnlein, M. Diamantakis
11:45-11:55	<i>Comfort break</i>				
11:55-12:55	Hydrostatic and Non-hydrostatic dynamics, resolved and permitted convection Christian Kühnlein	Algorithms for semi-implicit integrations of non-hydrostatic PDEs of atmospheric dynamics (I) Piotr Smolarkiewicz	The semi-Lagrangian, semi-implicit technique of the ECMWF model Michail Diamantakis	Massively Parallel Computing for NWP & Climate Andreas Müller	Reduced Precision Computing for Earth System Modelling Peter Düben
13:00-14:15	<i>Lunch break</i>				
14:15-15:15	Vertical discretisation Christian Kühnlein	Introduction to element based computing, finite volume and finite element methods Joanna Szmelter	Operational and research activities at ECMWF now and in the future. Sarah Keeley, Andy Brown	Discontinuous higher order discretization methods (I) Willem Deconinck	Course wrap up, Certificates Sarah Keeley
15:15-15:45	<i>Coffee break</i>				
15:45-16:45	Weather Room tour Poster session followed by Ice Breaker	Mesh generation Joanna Szmelter Computer Hall tour	Eulerian time-stepping schemes for NWP & Climate Michail Diamantakis	Discontinuous higher order discretization methods (II) Willem Deconinck	