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Supplement of

The impact of deep convection representation in a global atmospheric model on the warm conveyor belt and jet stream during NAWDEX IOP6

Gwendal Rivière et al.

Correspondence to: Gwendal Rivière (griviere@lmd.ens.fr)

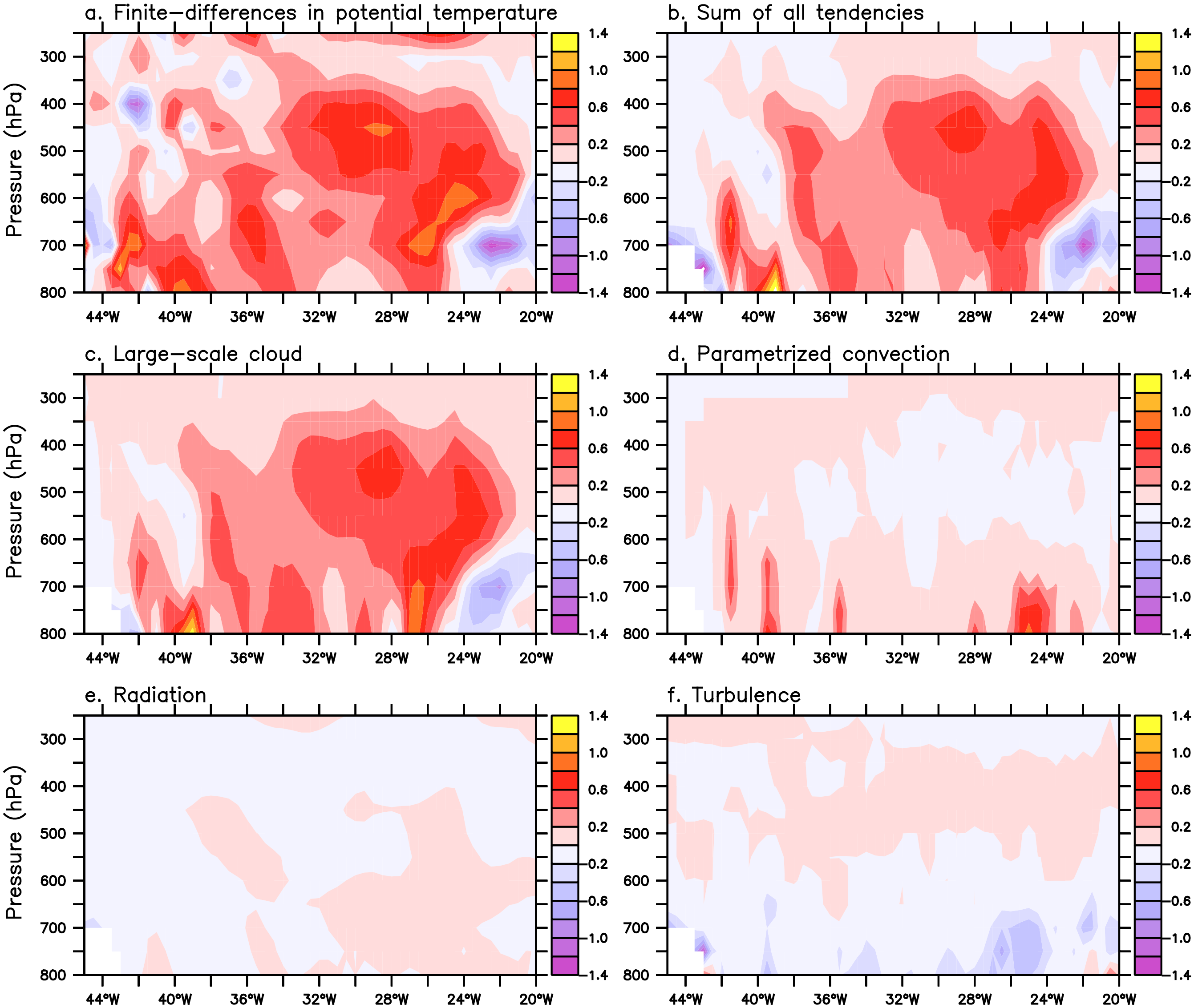

Figure S 1. Latitudinally-averaged (63°-65°) heating rates (int: 0.2 K h^{-1}) in B85 run for (a) computed with finite differences in time and space as in the whole paper and (b) resulting from the sum of all diabatic tendencies issued from model outputs. Panel (b) is the sum of (c) large-scale cloud (resolved) sensible and latent heating, (d) parametrized convection sensible and latent heating, (e) radiative heating and (f) turbulence heating.

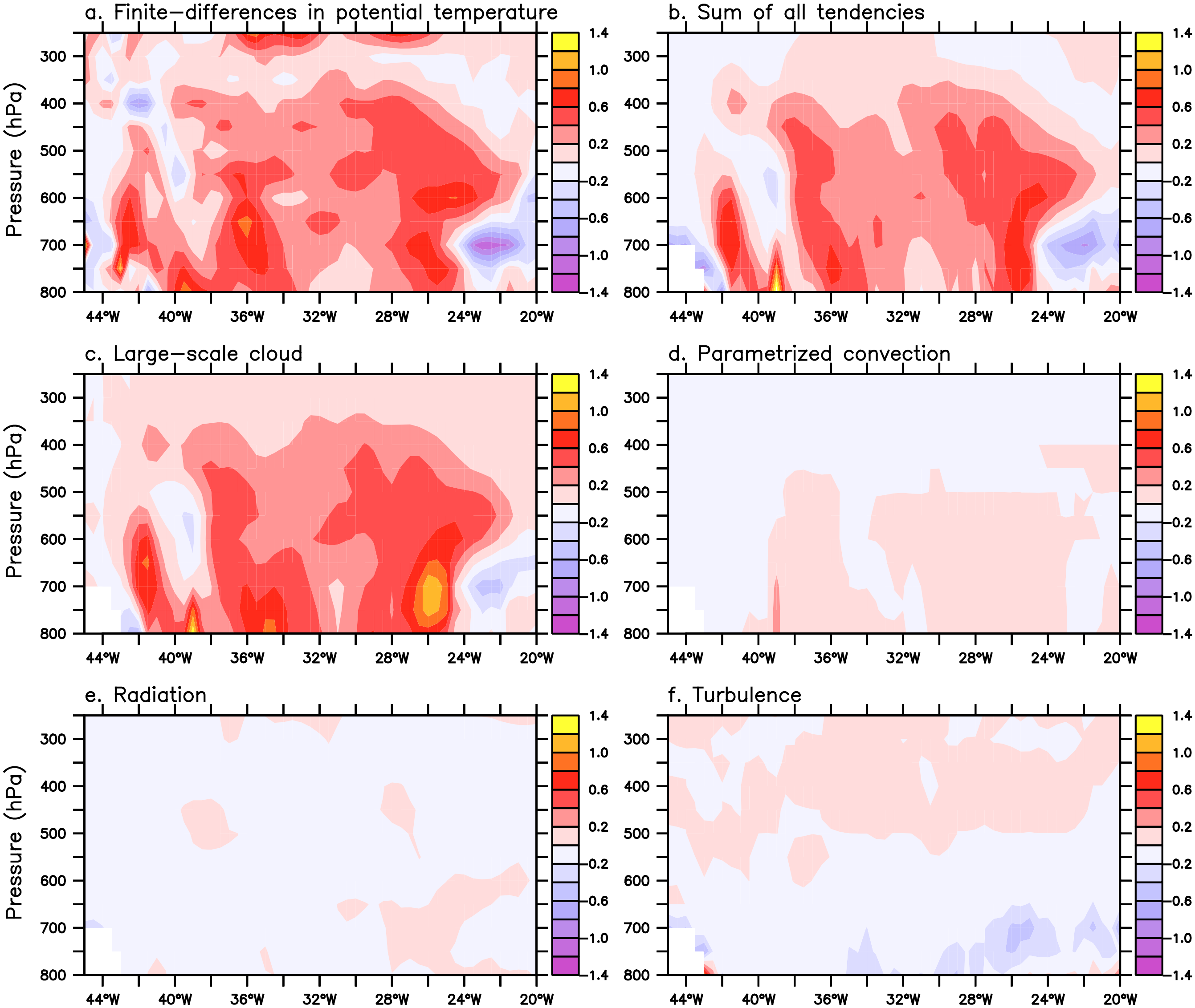

Figure S 2. As in Fig. 2 but for PCMT run.

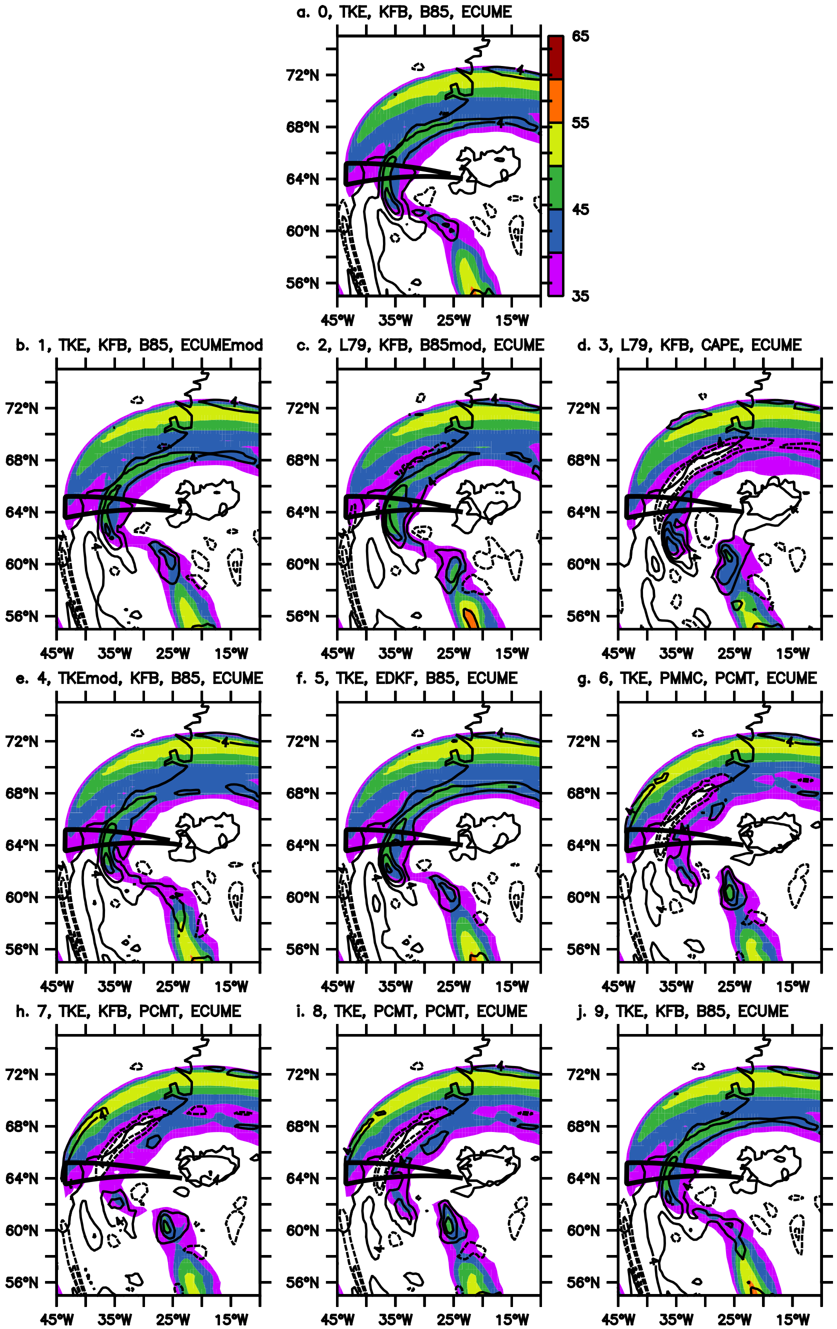

Figure S 3. Wind speed at 300 hPa (shadings; int: 5 m s^{-1}) and difference with respect to ECMWF operational analysis (contours; int: 4 m s^{-1}) at 12 UTC 2 October (i.e corresponding to 24-hours forecast) for 10 members starting with the same initial conditions but differing from four main physics package: turbulence, shallow convection, deep convection and surface fluxes and whose schemes are indicated in that order in the subtitle of each panel. Turbulence schemes can be TKE (Turbulent Kinetic Energy scheme of Cuxart et al. 2000), L79 (Louis, 1979), or TKEmod (slightly modified version of TKE in which horizontal advection is ignored). Shallow convection can be KFB (Kain and Fritsch, 1993; Bechtold et al., 2001), PCMT, PMMC (Pergaud et al. 2009) or EDKF (eddy diffusivity and Kain-Fritsch scheme). Deep convection schemes can be B85, PCMT, CAPE (B85 where the closure is based on the CAPE), B85mod (B85 in which deep convection is only triggered if cloud top exceeds 3000 m. The surface oceanic fluxes are based on Belamari et al. (2005)'s scheme (ECUME) and an alternative in which evaporative fluxes are enhanced (ECUMEmod). Members 0 and 9 are characterized by the same parametrization set-up, but member 9 differs in the modelling of orographic waves. See Ponzano et al. (2020) for more details on the setup of the different members.