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Supplement of

Improvement in the decadal prediction skill of the North Atlantic extratropical winter circulation through increased model resolution

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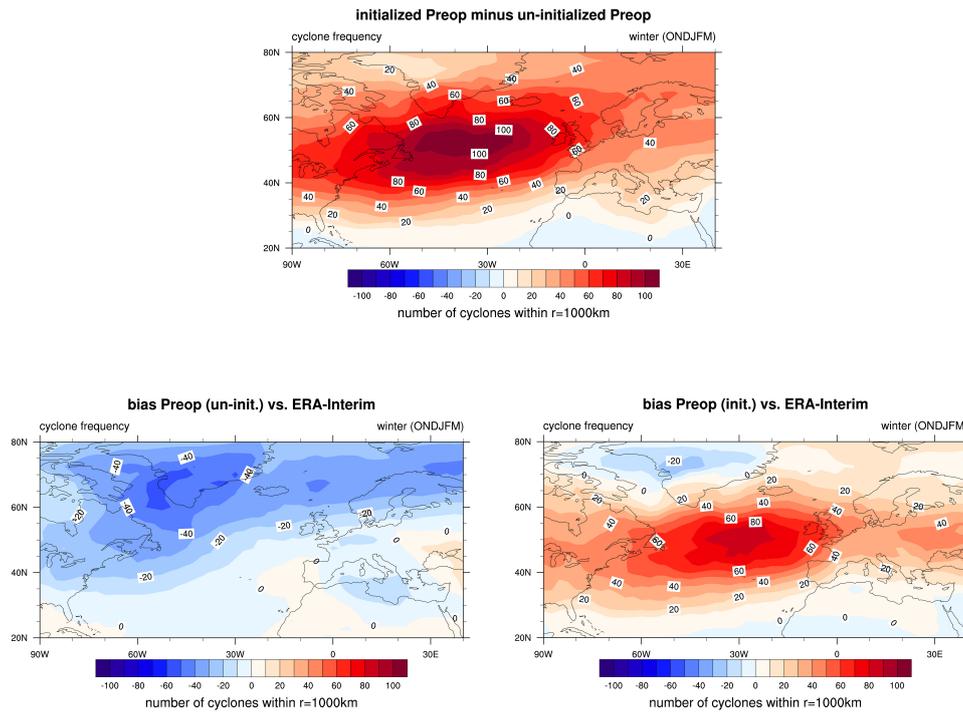


Figure S1. Effect of the initialization on the bias of the cyclone frequency in the MPI-ESM-LR pre-operational (Preop) system - this system is referred to as LR in the main manuscript. Top: difference of the initialized system minus the un-initialized system. Bottom left: bias in the un-initialized system towards ERA-Interim. Bottom right: bias in the initialized system towards ERA-Interim. (init.: initializations 1979-2012, 9 lead winters, 5 members; un-init.: historical simulations 1961/62-2004/05; ERA-Interim: 1979/80-2016/17)

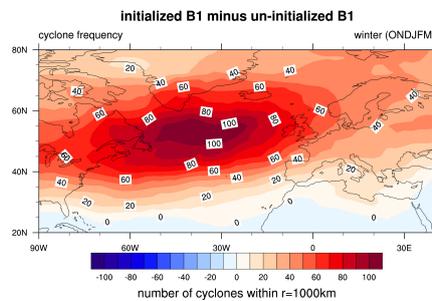


Figure S2. Effect of the initialization on the bias of the cyclone frequency in the MPI-ESM-LR Baseline1 (B1) system. Difference of the initialized system minus the un-initialized system. (init.: initializations 1979-2012, 9 lead winters, 5 members; un-init.: historical simulations 1961/62-2004/05)

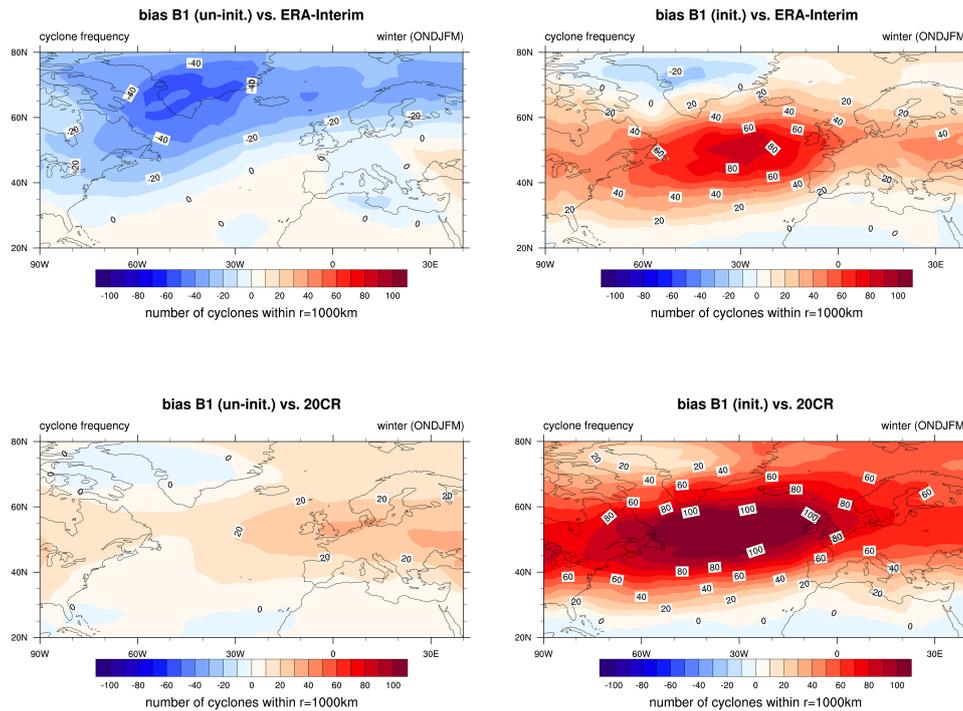


Figure S3. Effect of the reanalysis on the bias of the cyclone frequency in the B1 system. Top left: bias in the un-initialized B1 system towards ERA-Interim. Top right: bias in the initialized B1 system towards ERA-Interim. Bottom left: bias in the un-initialized B1 system towards 20CR. Bottom right: bias in the initialized B1 system towards 20CR. (init.: initializations 1979-2012, 9 lead winters, 5 members; un-init.: historical simulations 1961/62-2004/05; ERA-Interim: 1979/80-2016/17; 20CR: 1961/62-2000/01)

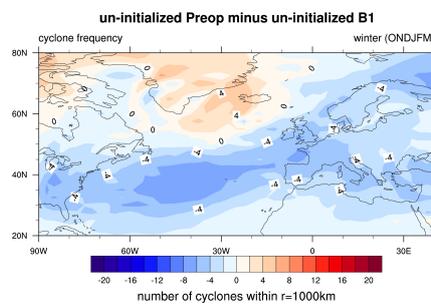


Figure S4. Effect of the model development on the bias of the cyclone frequency. Difference of the un-initialized Preop system minus the un-initialized B1 system. (un-init.: historical simulations 1961/62-2004/05)