

Dynamics Research at Met Éireann

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28th May 2019

From Rolling Work Plan

DY1: Vertical interpolation of LBCs

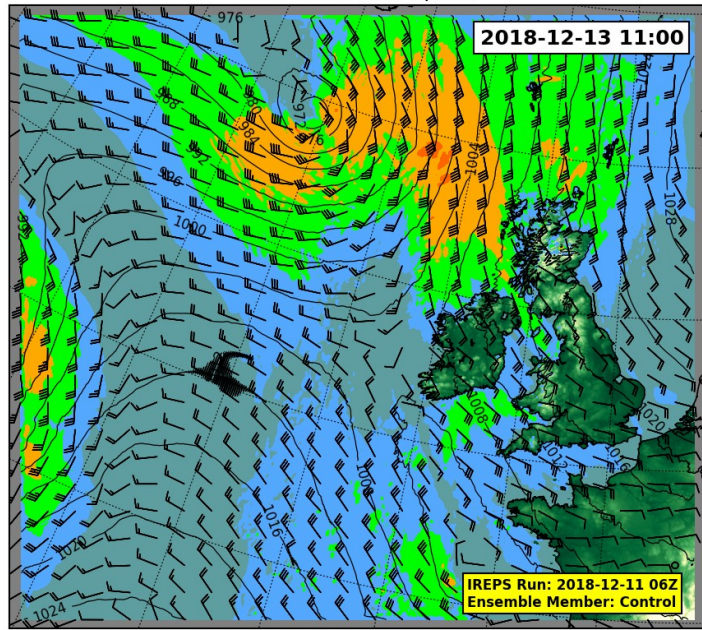
DY2: Time-stepping scheme

HR1: High-resolution experiments

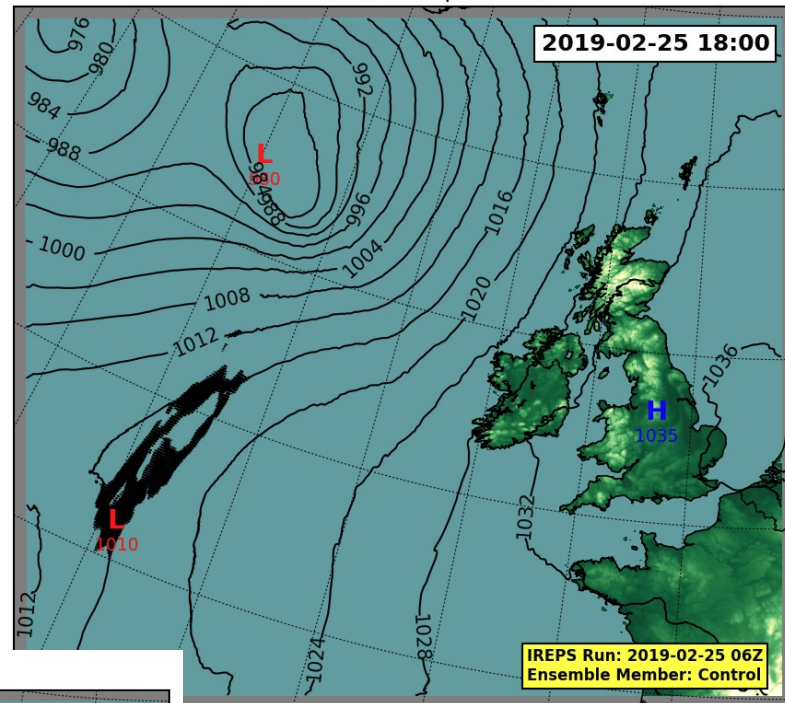
Operational Dynamics

MSLP noise

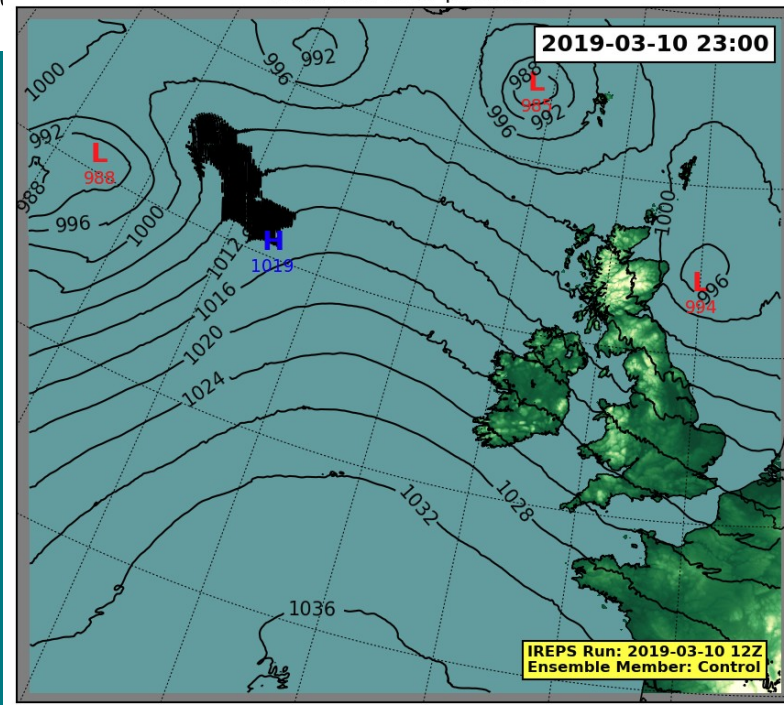
10m mean wind speed



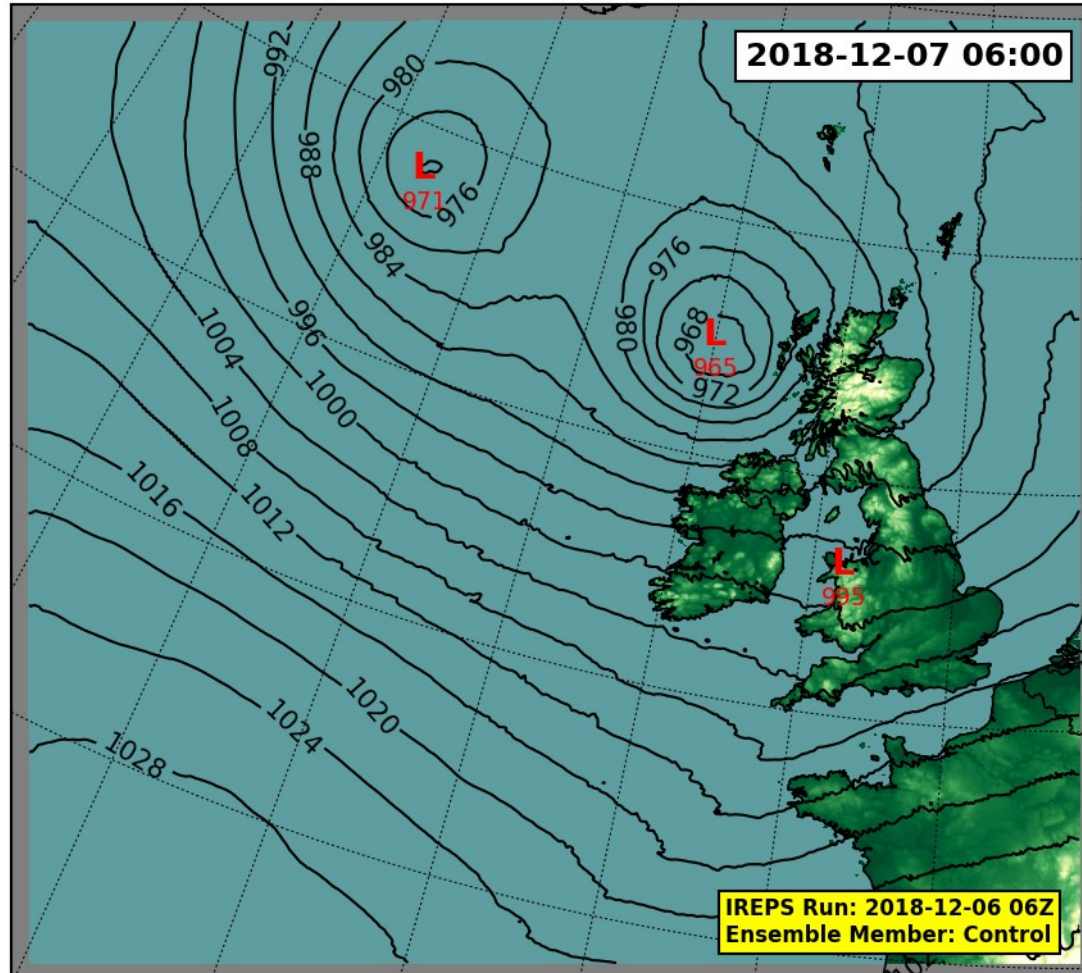
Mean sea level pressure



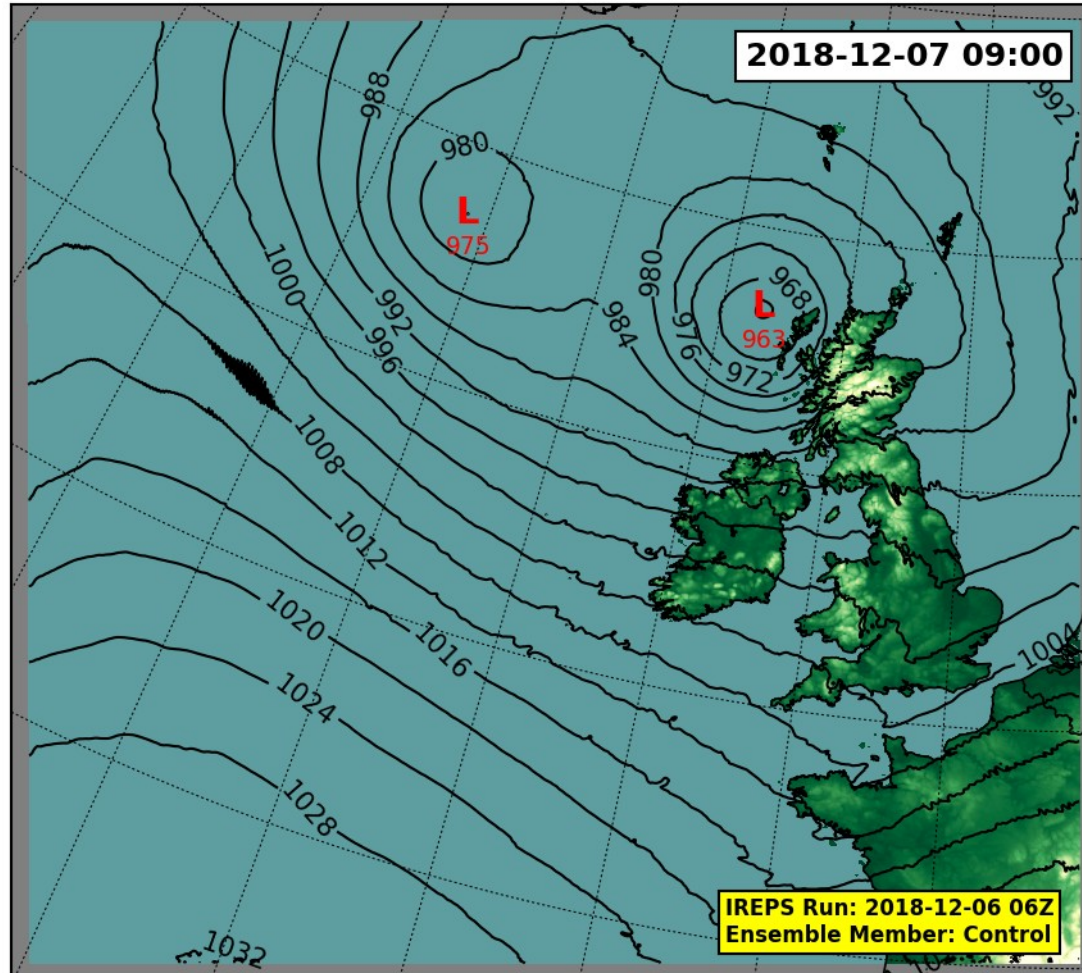
Mean sea level pressure



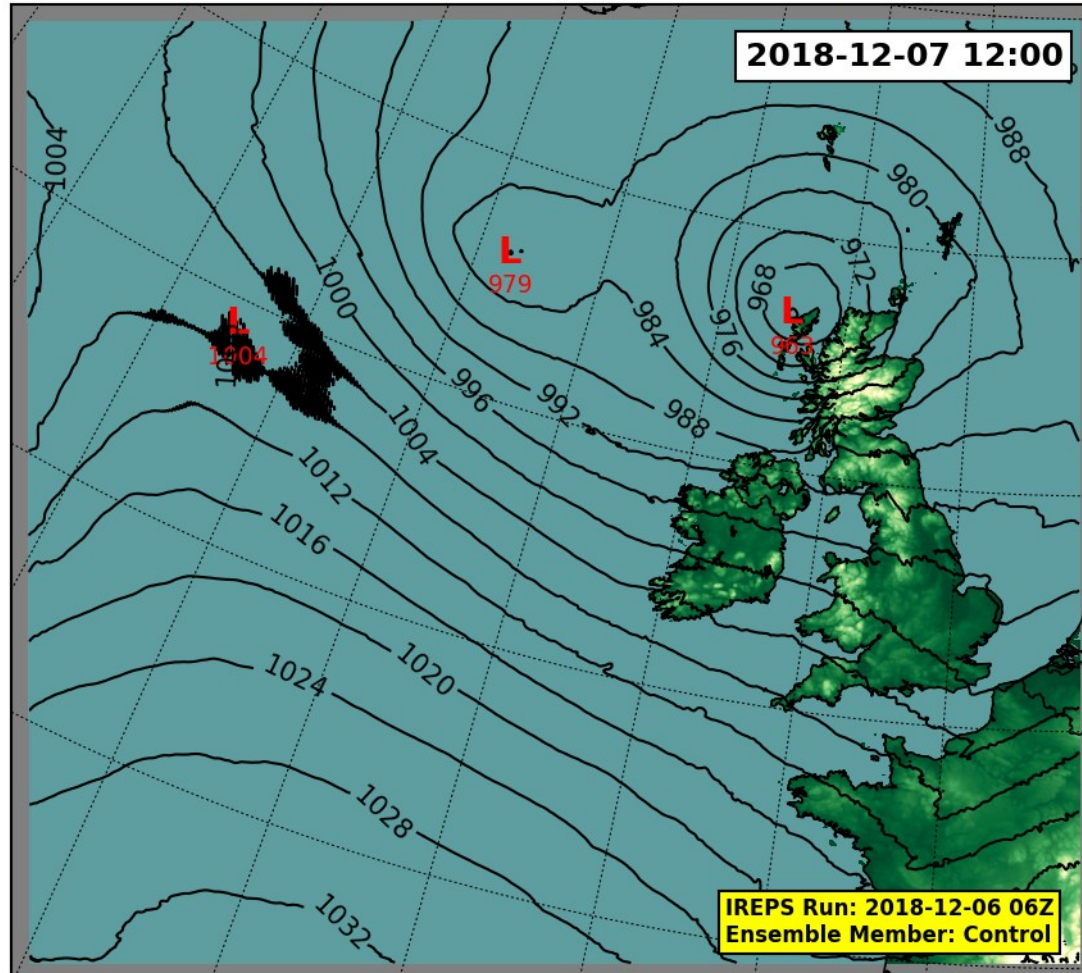
Mean sea level pressure



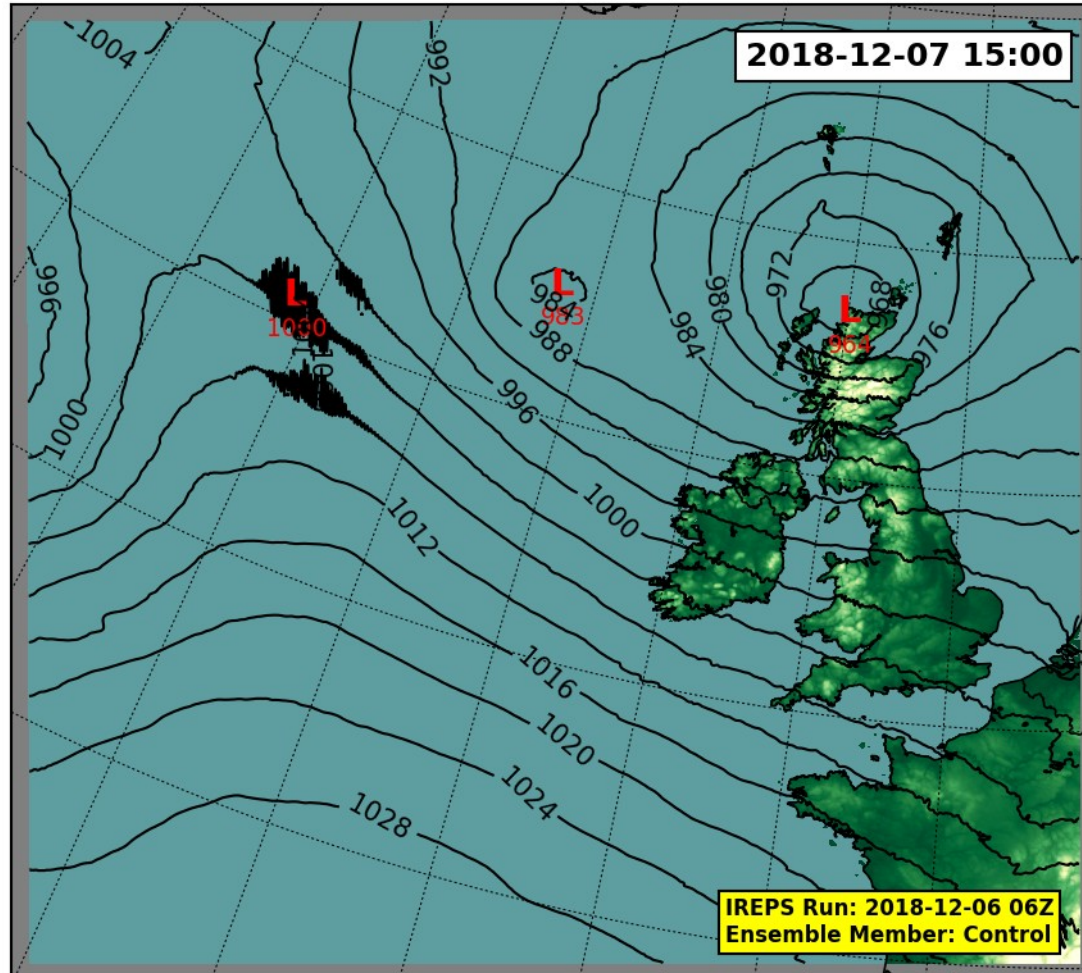
Mean sea level pressure



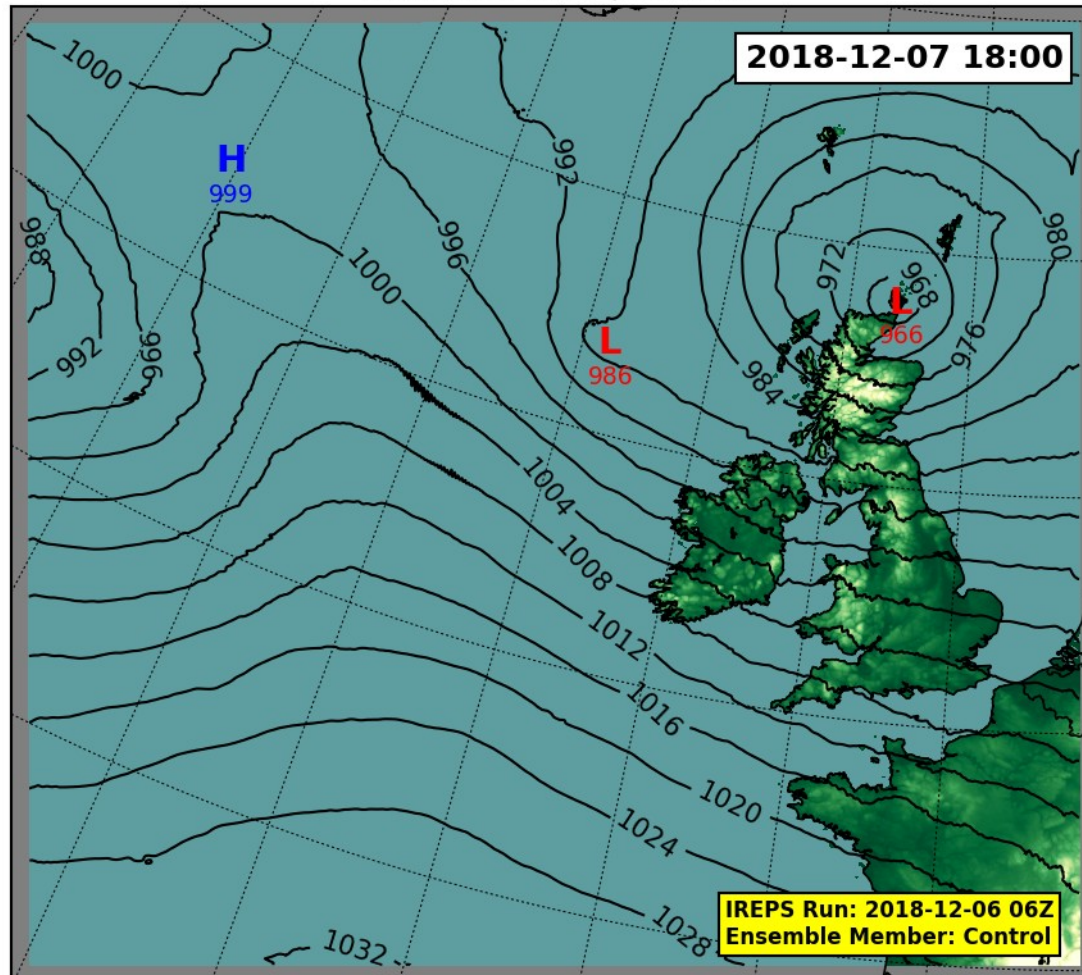
Mean sea level pressure

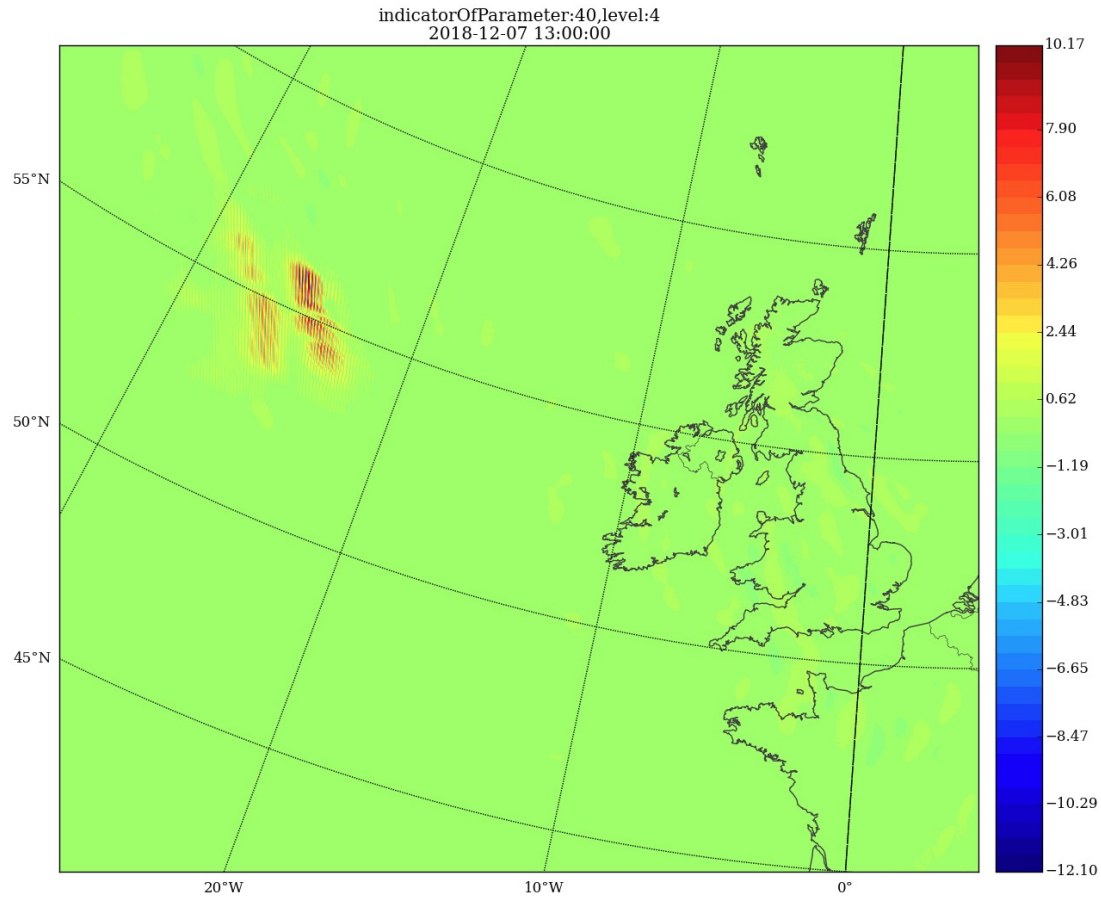


Mean sea level pressure



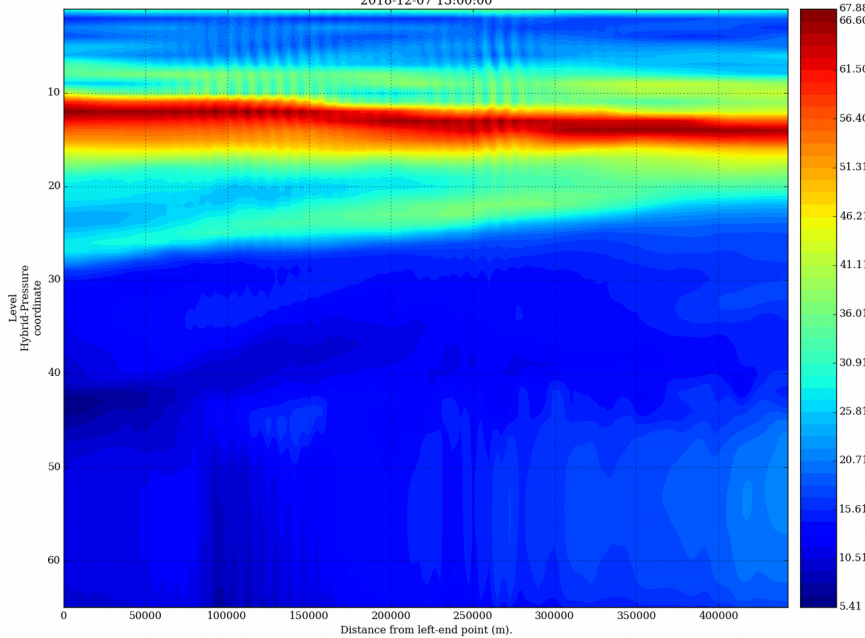
Mean sea level pressure



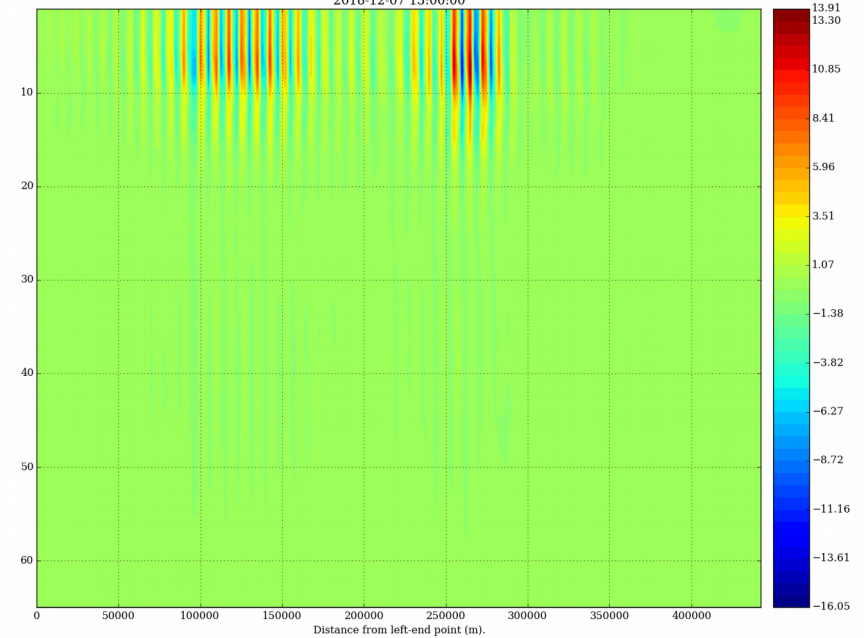


Cross-sections through noise region

Section of {'GRIB': 'indicatorOfParameter:33'} between
< (-28.0, 54.0) and (-22.0000000001, 56.0) ->
2018-12-07 13:00:00



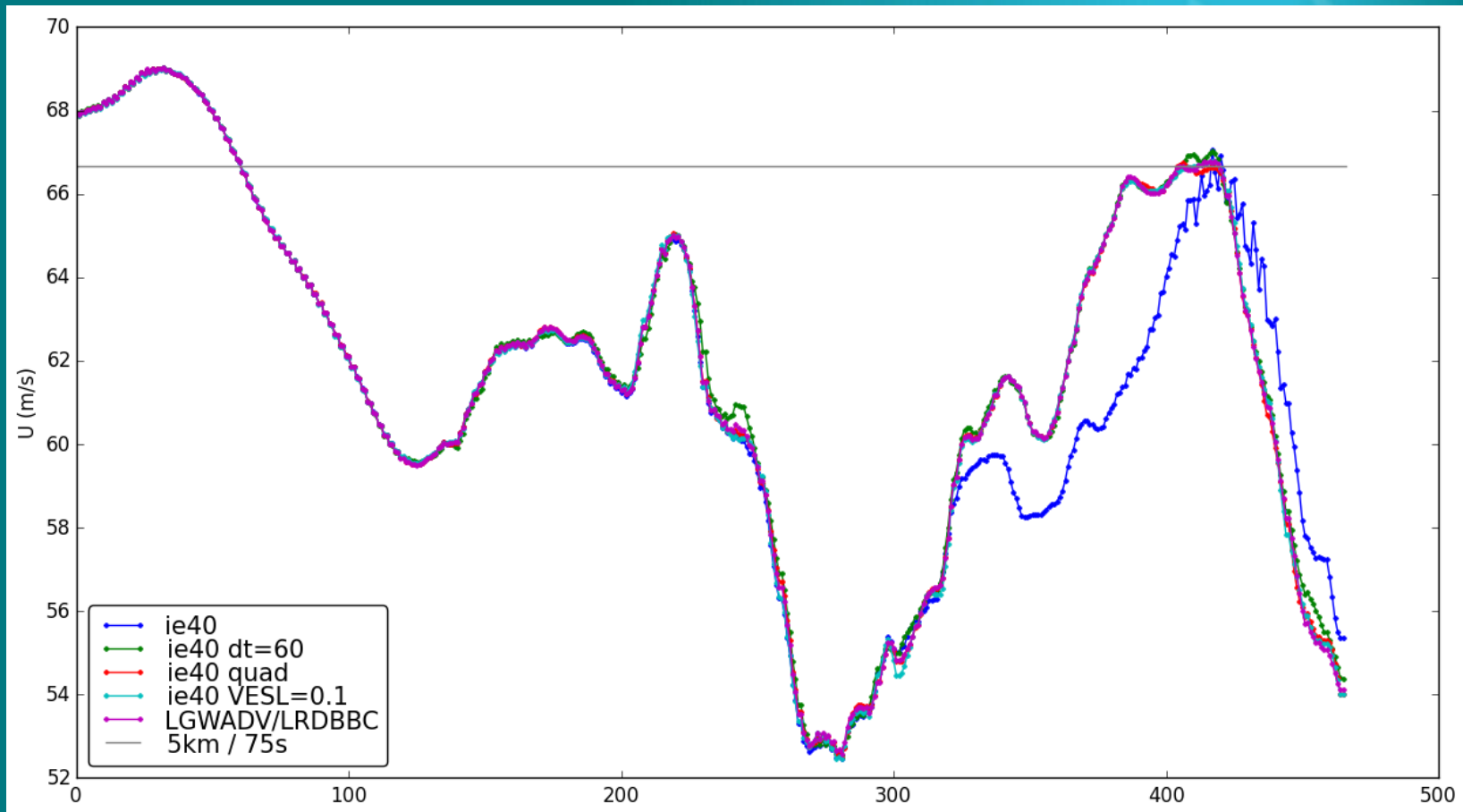
Section of {'GRIB': 'indicatorOfParameter:40'} between
< (-28.0, 54.0) and (-22.0000000001, 56.0) ->
2018-12-07 13:00:00



U

W

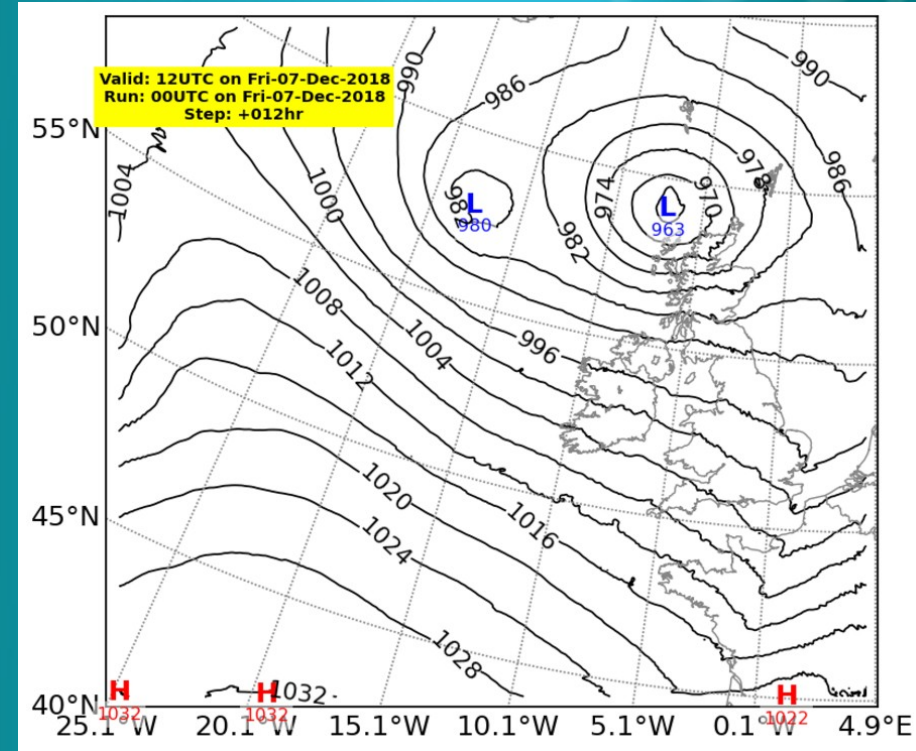
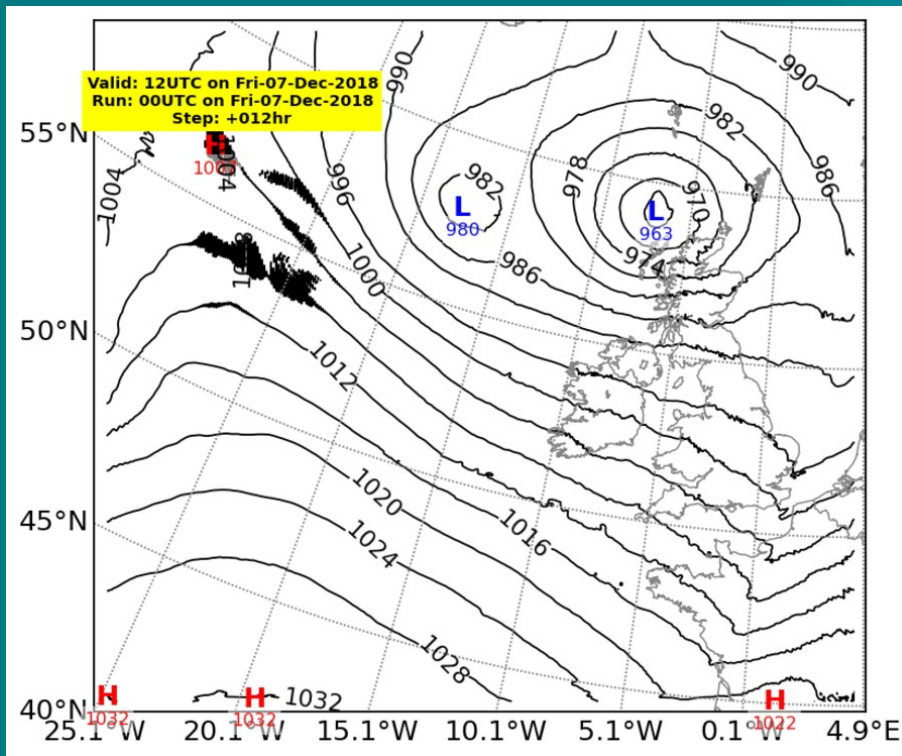
Cross-sections through noise region



u at level 13

NameList settings

{LGWADV, LRDBBC}



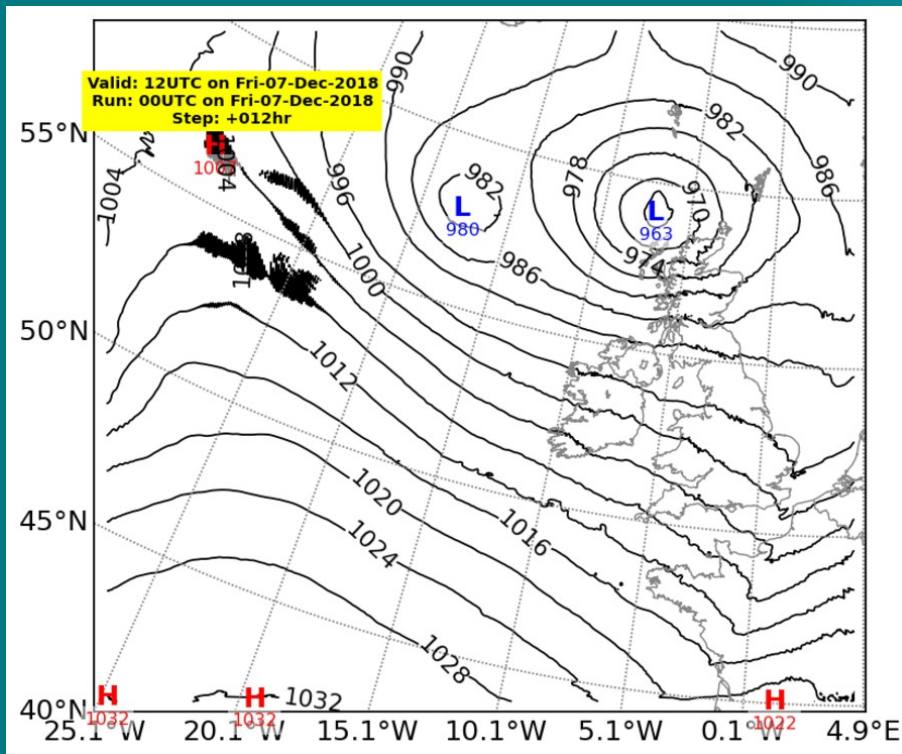
{False, True}

{True, False}

Default in HIRLAM configurations

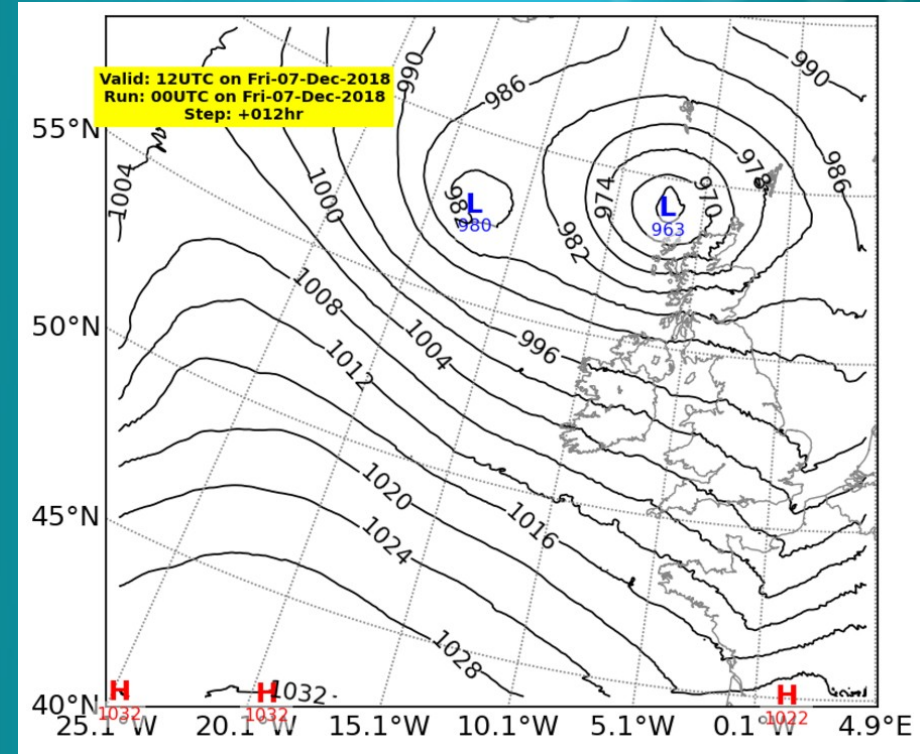
namelist settings

{LGWADV, LRDBBC}



{False, True}

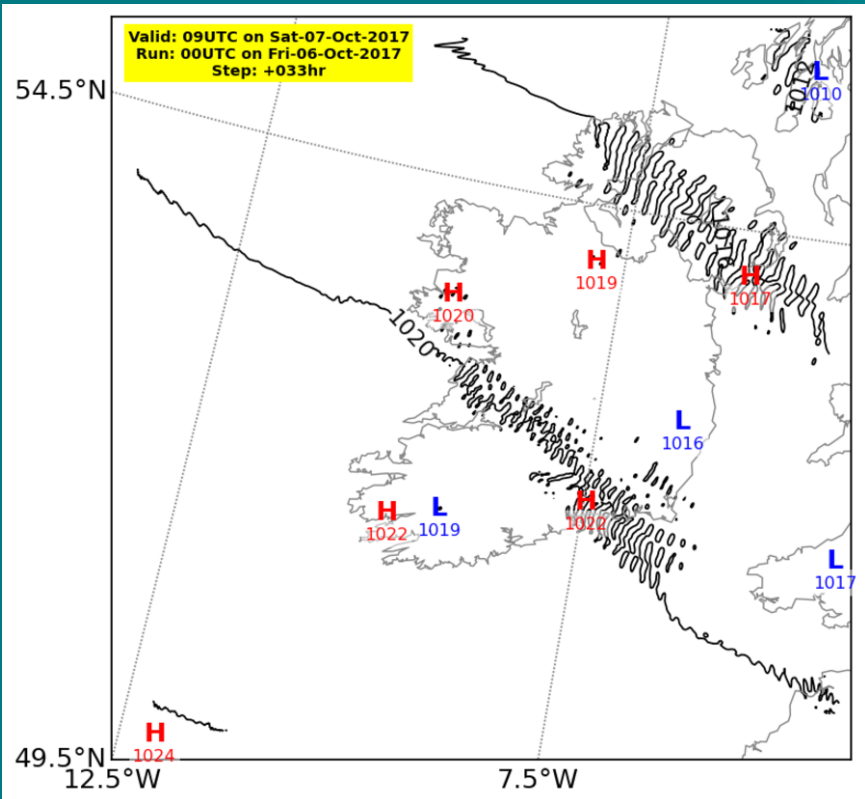
Default in HIRLAM configurations



{True, False}

Unstable with VESL

Experiment	Details (relative to default operational "noise" experiment)	Noise	Comments
noise	Default ie40 operational set-up	Yes	
noise_dt60	TSTEP=60	No	
noise_quad	Quadratic grid	No	
noise_cub	Cubic grid	No	
noise_LCOMADV	LCOMADV=T	Yes	
noise_UNBC	LUNBC=no	Yes	
noise_blending	Blending instead of 3DVar	Yes	
noise_sponge	LNSPONGE=T	Yes	Much noisier
noise_dt80	TSTEP=80	Yes	Different noise patterns, less noisy
noise_dt90	TSTEP=90	Yes	Different noise patterns, locations and times. More noisy.
noise_hrbranch	Default HR branch, i.e. none of our ie40 local changes	No	HARATU=no, high-level winds are a bit weaker, don't hover around Courant=2
noise_hrbranch_noHAR	HR branch with HARATU=no	Yes	Very similar to our ie40 now
noise_lqm	LQM(PD,T,VD)=T	Yes	
noise_lsettlsF	LSETTLS=F	Yes	Even noisier
noise_nitmp5	No. of iterations for SL trajectories, NITMP=5	Yes	
noise_nocomad	LCOMAD*=F	Yes	
noise_sitra100	Cold SI reference temperature SITRA=100	Yes	
noise_pc	LPC_FULL=T; NSITER=1; LPC_NESC=T; LPC_CHEAP=T; LSETTLS=F; LPC_NESCT=F;	Yes	Lots more noise, different patterns
noise_pc_dt60	As noise_pc, but TSTEP=60	Yes	Very small amount of noise
noise_ici2	As noise_pc, but NSITER=2	Yes	Lots more noise, different patterns
noise_vesl01	VESL=0.01	Yes	Less noise than when VESL=0
noise_vesl02	VESL=0.02	No	
noise_vesl05	VESL=0.05	No	
noise_vesl	VESL=0.1	No	
noise_rdamp10	RDAMP*=10 (with RDAMPPD=200000)	Yes	Small amount
noise_rdamp1	RDAMP*=1 (with RDAMPPD=200000)	No	
noise_rdamp1a	RDAMP*=1 (with RDAMPPD=5; RDAMPQ=0)	No	
noise_rdamppd	RDAMPPD=20	Yes	Much noisier
noise_lgwadv	LGWADV=T; LRDBBC=F	No	
noise_lrdbbc	LGWADV=F; LRDBBC=F	Yes	
noise_chmi	CHMI namelist, but NVDVAR=3	N/A	Unstable, must have NVDVAR=4 (or dt=30s)
noise_chmitest2	CHMI namelist, as close as I could get	No	Main noise gone
noise_chmitest3	Like above, but RDAMP* as default	No	Similar



PC settings from CHMI

