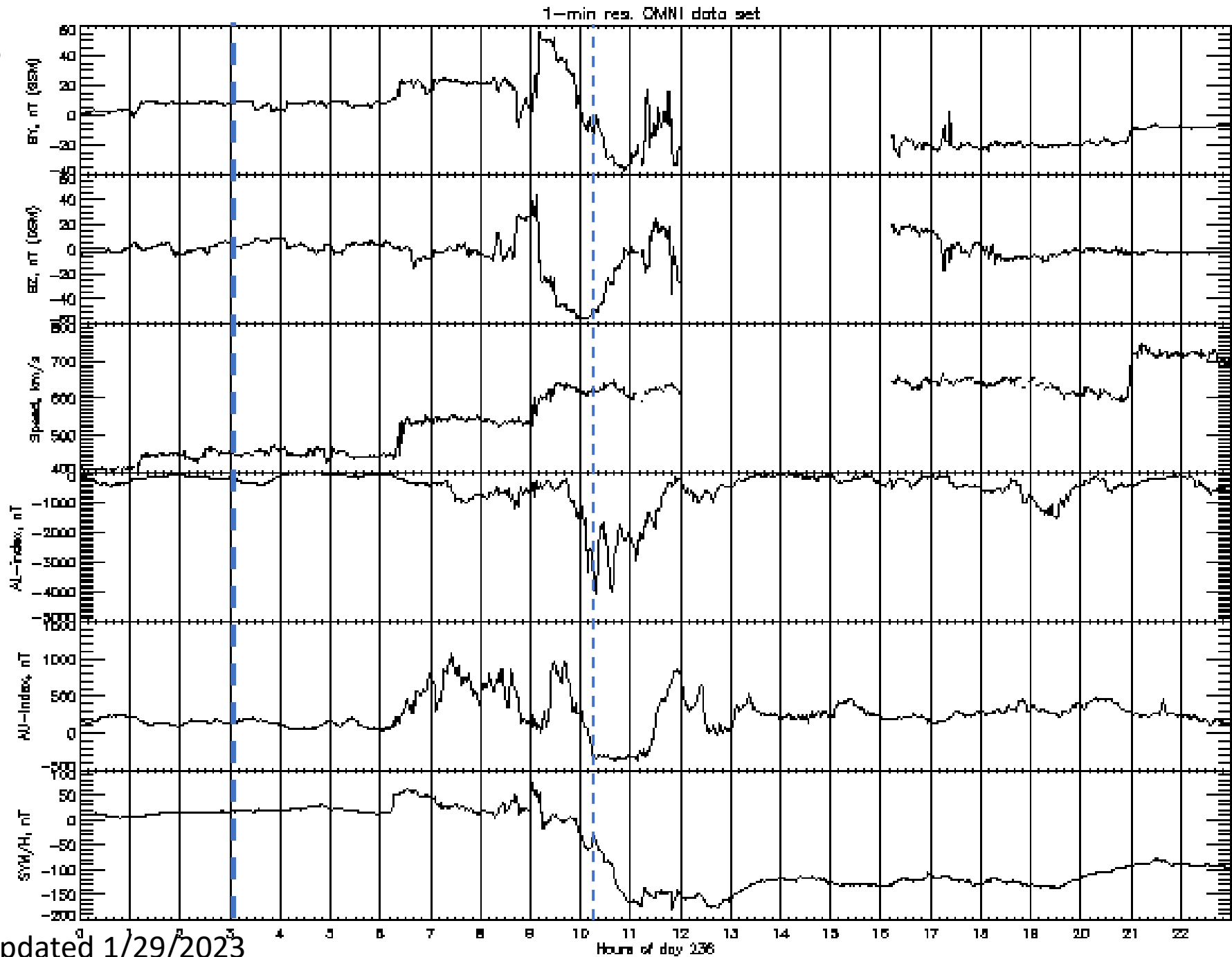


24 August 2005



WACCM-X high resolution – 25km horizontal 1 minute output, after UT6 receives input from GAMERA

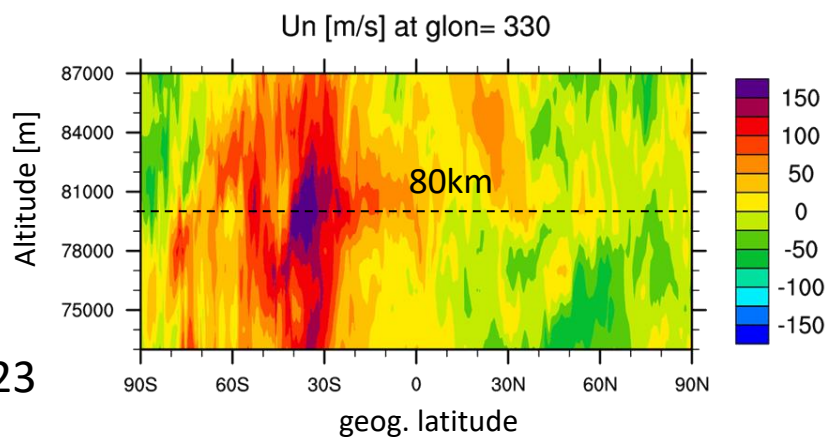
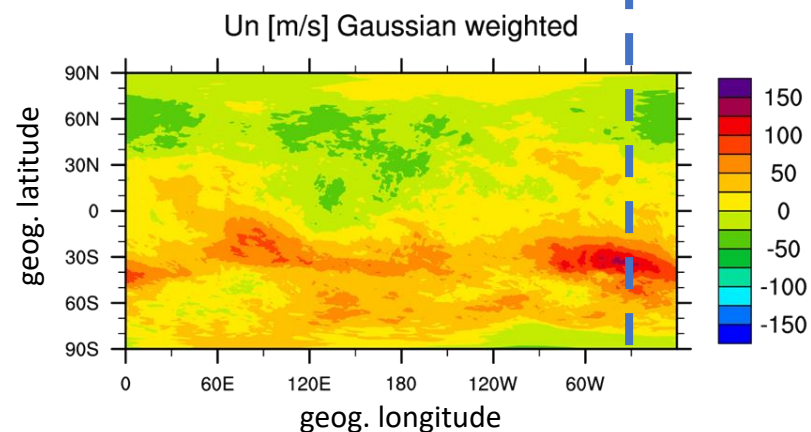
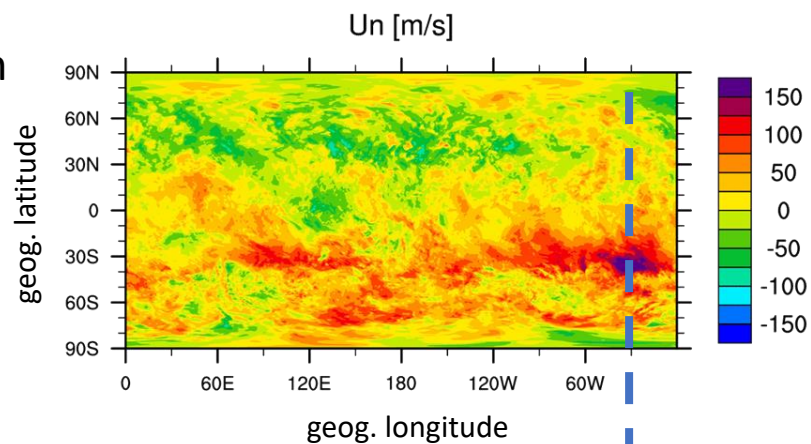
Here focus on UT3 0-18min period

Quiet time
(looked at UT10.15 for another project)

WacX high res Un hgt=80km; YYMMDD=20050824; UT=3.01667

WacX high res Un hgt=80km; YYMMDD=20050824; UT=3.26667

~3 UT 1min



~3 UT 16min

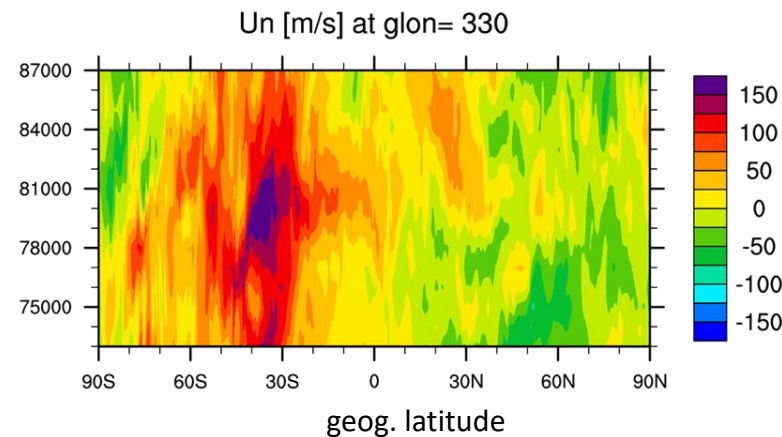
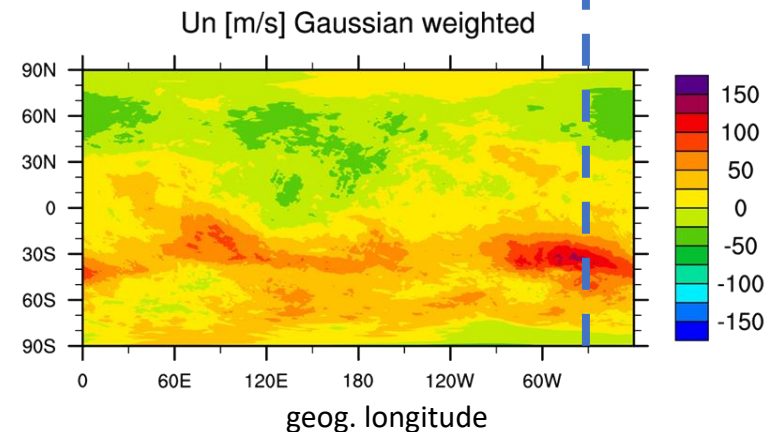
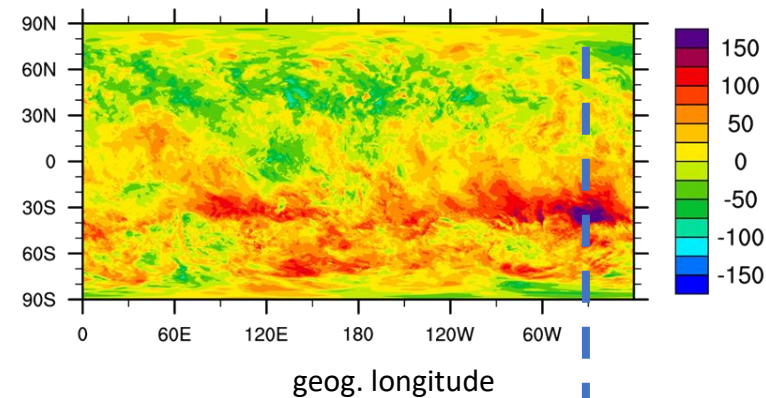
Zonal wind at 80km

**Not much
change in 15
min on these
large scales**

Gaussian weighted
zonal wind at 80km
FWHM=10km

Zonal wind at
glon=330deg
(see blue dashed
line above)

Un [m/s]

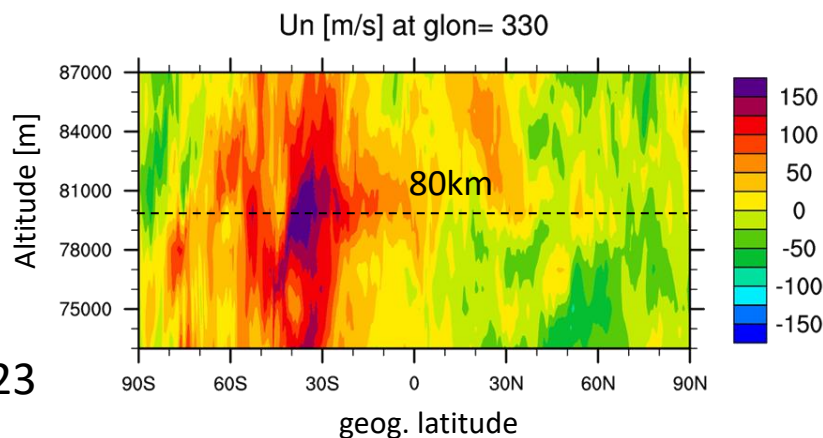
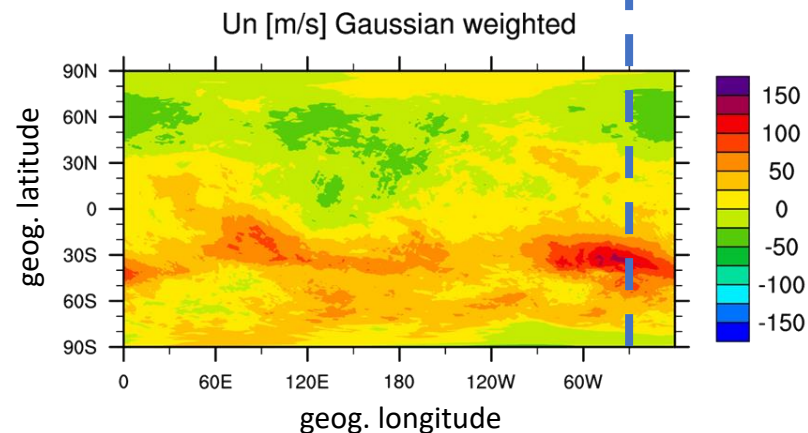
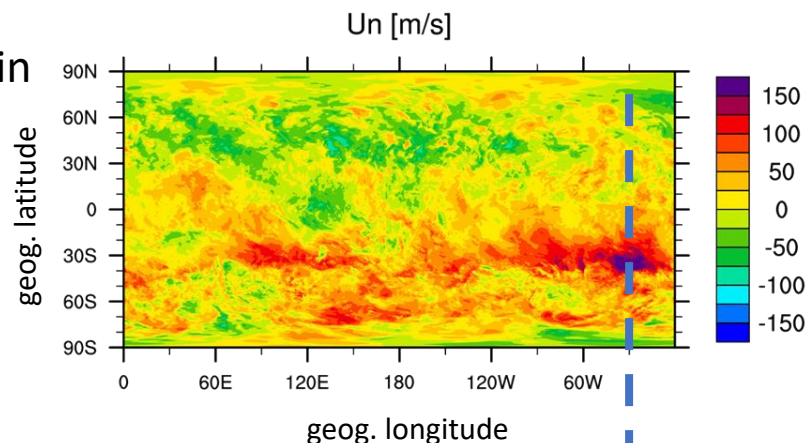


01/29/2023

WacX high res Un hgt=80km; YYMMDD=20050824; UT=3.28333

WacX high res Un hgt=80km; YYMMDD=20050824; UT=3.3

~3 UT 17min



01/29/2023

~3 UT 18min

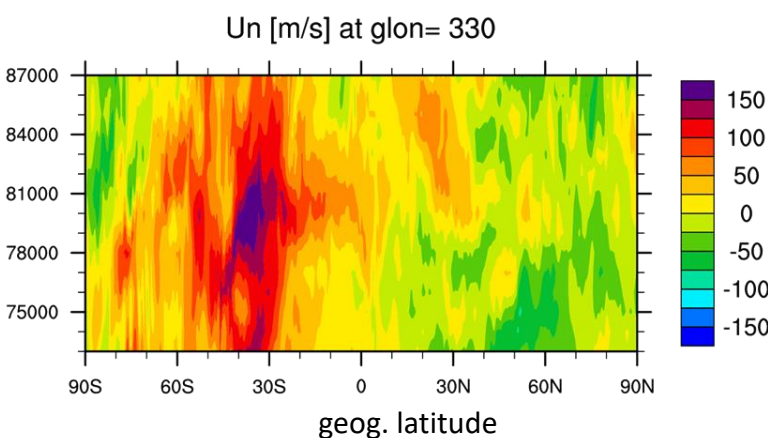
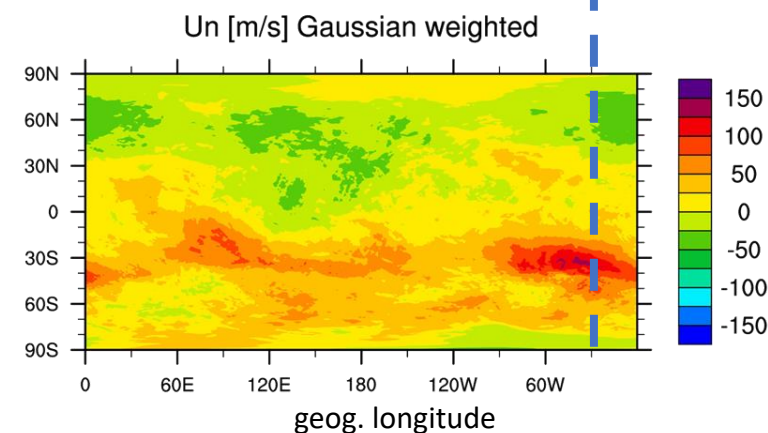
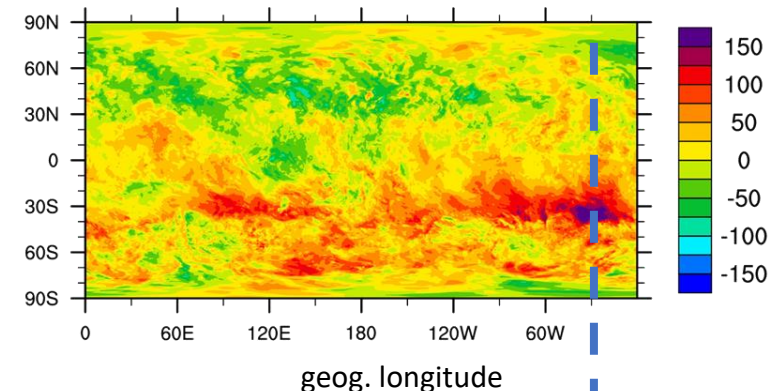
Zonal wind at 80km

Snap shots 1
min apart

Gaussian weighted
zonal wind at 80km
FWHM=10km

Zonal wind at
glon=330deg
(see blue dashed
line above)

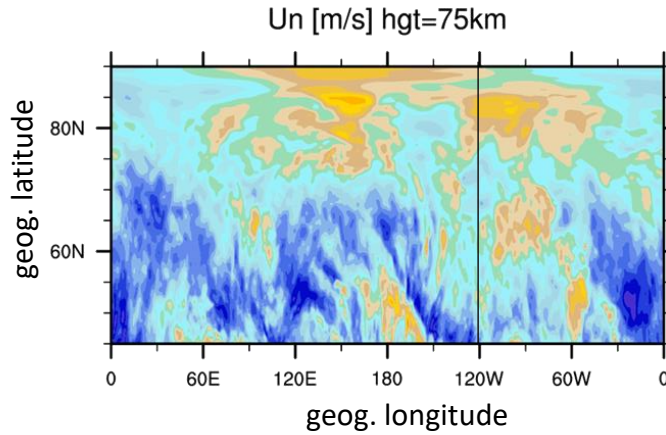
Un [m/s]



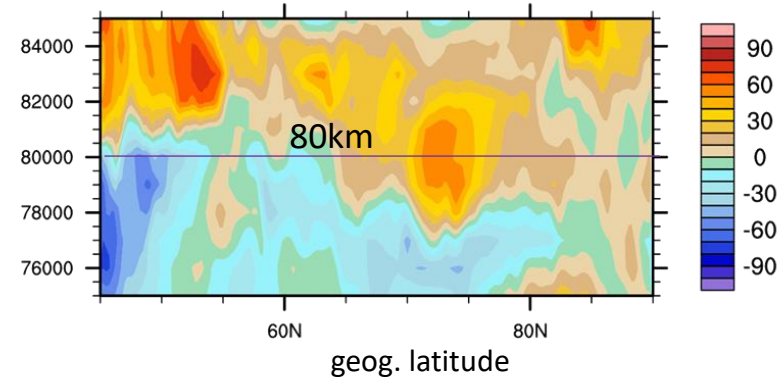
WacX high res. Un; YYMMDD=20050824; UT:min=3:0

~3 UT 0min

Zonal wind at 75km

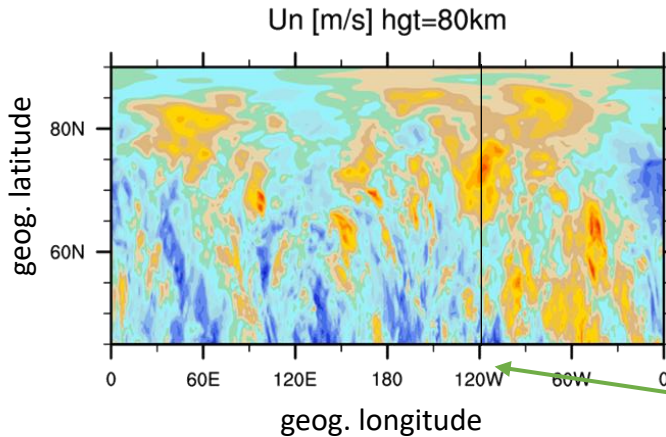


Un [m/s] lon= 120W / 240

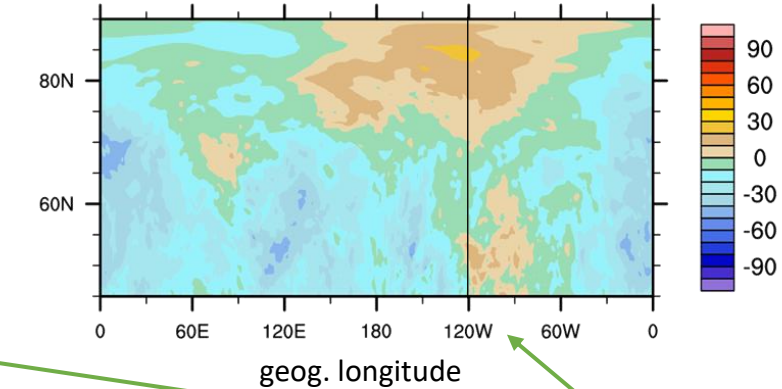


Zonal wind at
glon=120W (see
black line)

Zonal wind at 80km

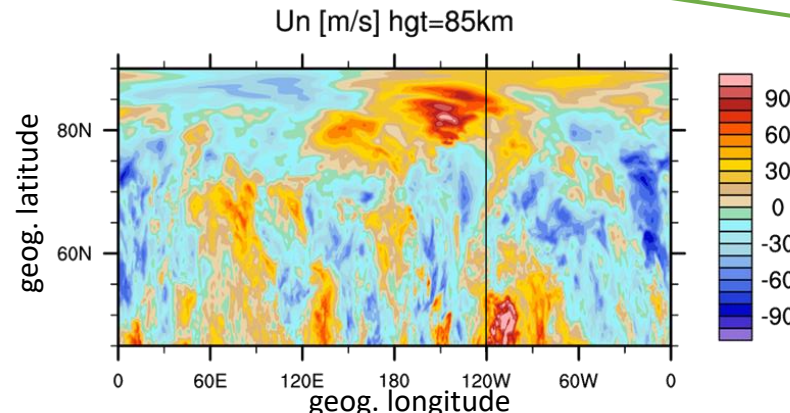


Gaus Un [m/s] hgt= 80km



Vertical Gaussian
weighted zonal wind
at 80km
FWHM=10km

Zonal wind at 85km



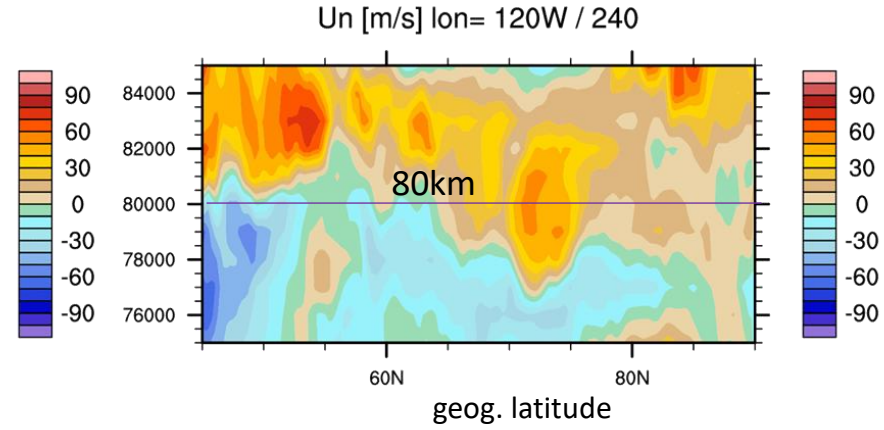
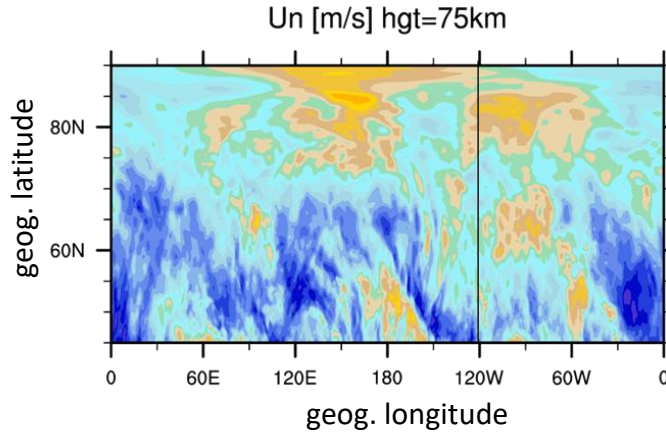
What is the spatial correlation of
the zonal wind at 80km and the
Gaussian weighted wind at 80km?

01/29/2023

WacX high res. Un; YYMMDD=20050824; UT:min=3:18

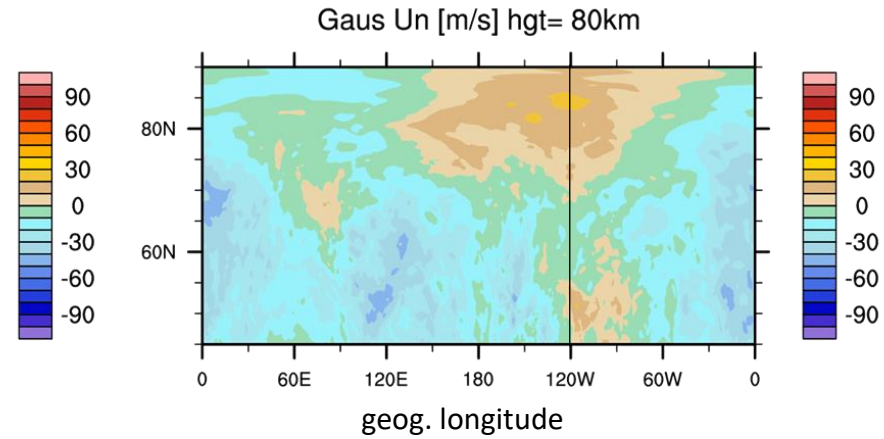
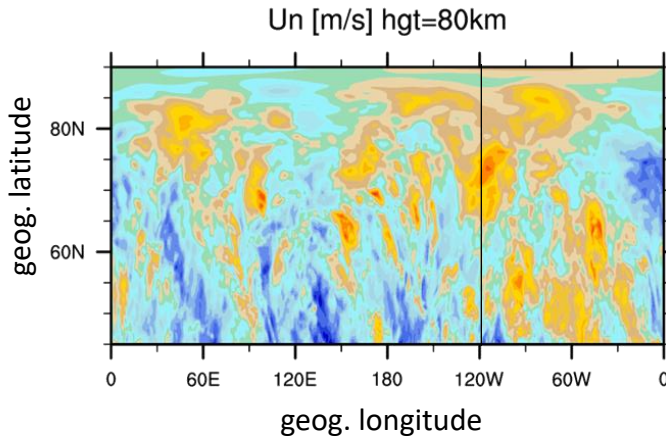
~3 UT 18min

Zonal wind at 75km



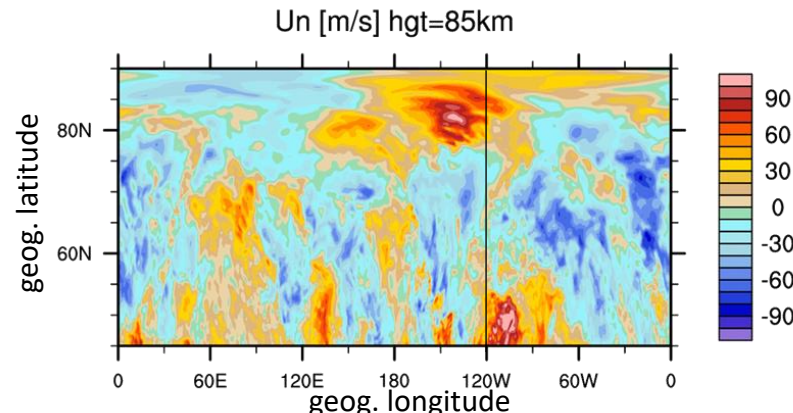
Zonal wind at
glon=120W (see
black line)

Zonal wind at 80km



Vertical Gaussian
weighted zonal wind
at 80km
FWHM=10km

Zonal wind at 85km

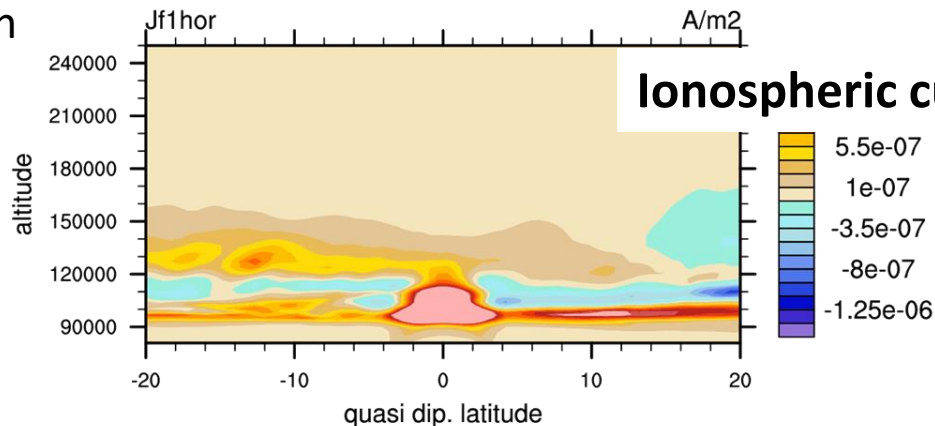


**Some change in 18 min but not
much in Gaussian weighted
wind**

01/29/2023

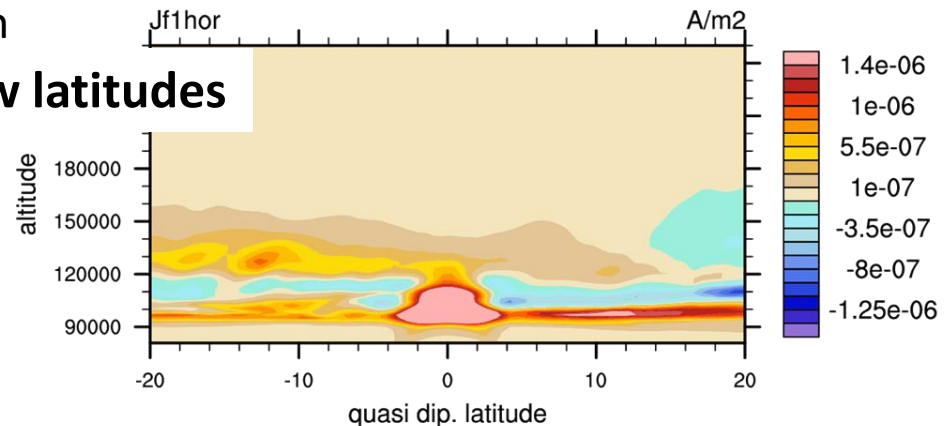
WacxHr Gamera: Jf1hor doy:ut:mn=236:3:0 qdlon=-175

~3 UT 0min

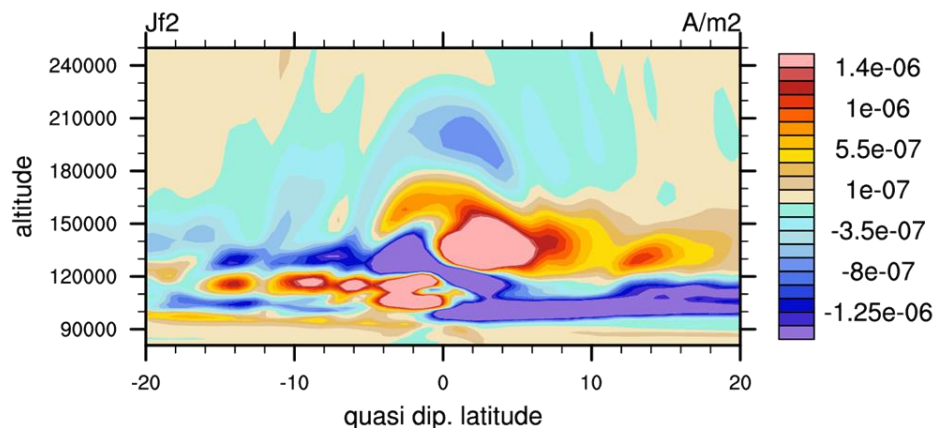


~3 UT 1min

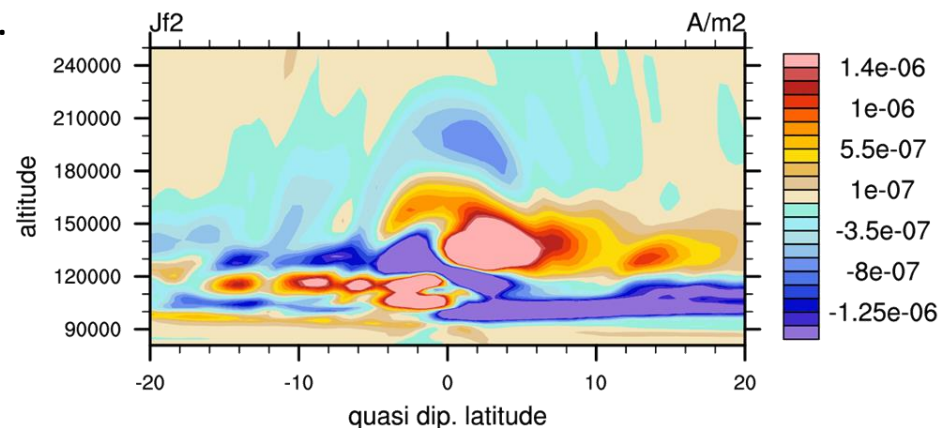
WacxHr Gamera: Jf1hor doy:ut:mn=236:3:1 qdlon=-175



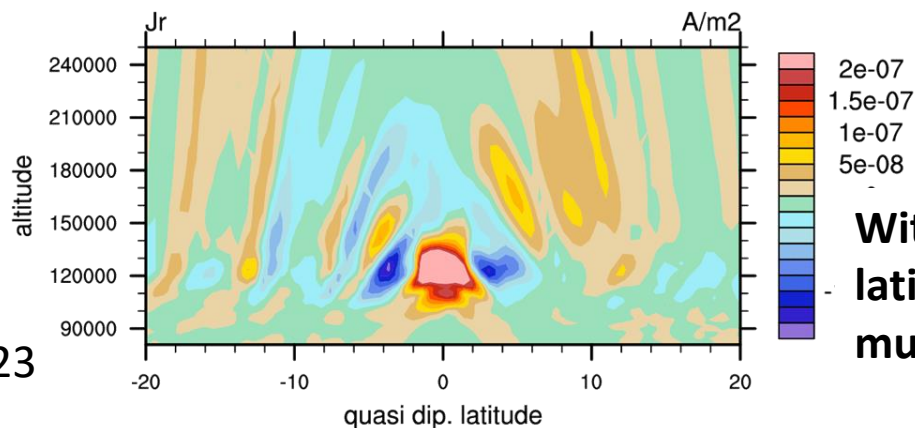
WacxHr Gamera: Jf2hor doy:ut:mn=236:3:0 qdlon=-175



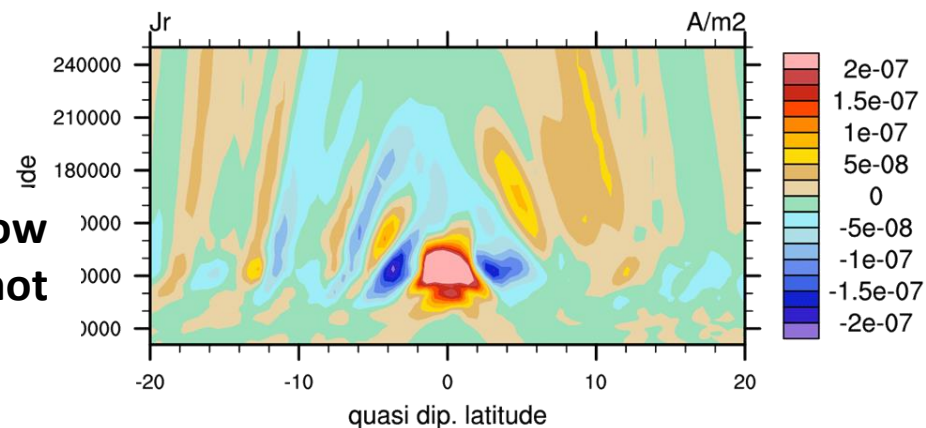
WacxHr Gamera: Jf2hor doy:ut:mn=236:3:1 qdlon=-175



WacxHr Gamera: Jr doy:ut:mn=236:3:0 qdlon=-175



WacxHr Gamera: Jr doy:ut:mn=236:3:1 qdlon=-175



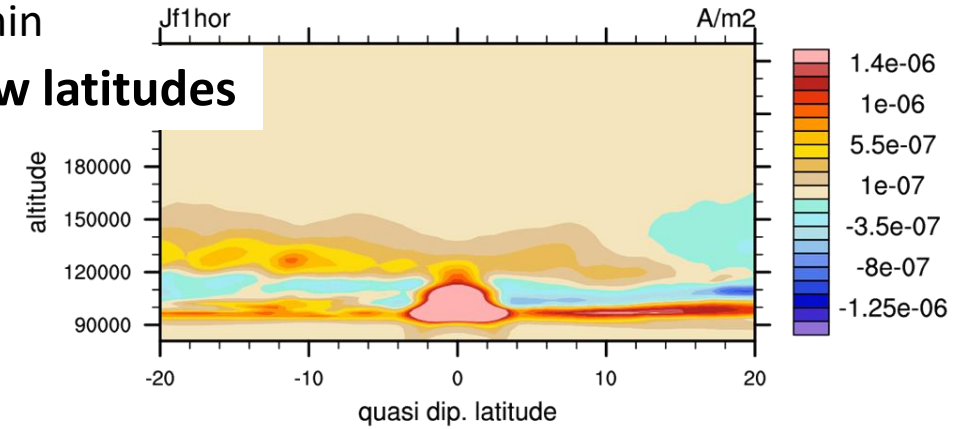
01/29/2023

WacxHr Gamera: Jf1hor doy:ut:mn=236:3:18 qdlon=-175

~3 UT 18min

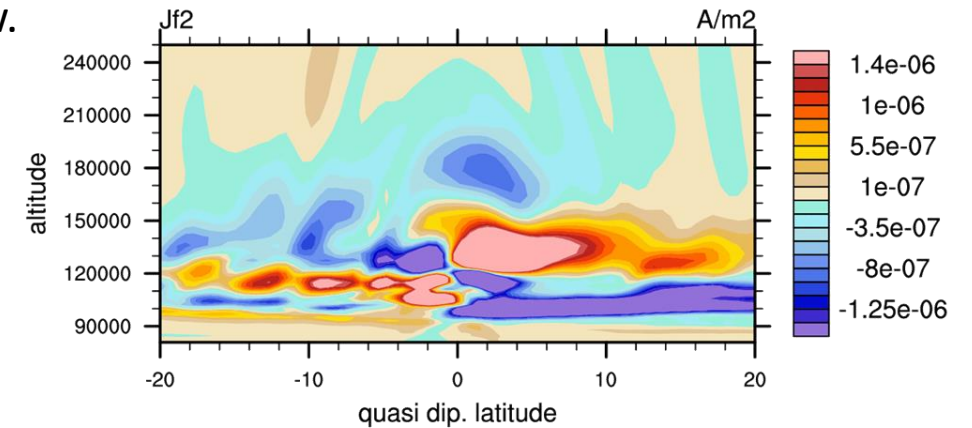
Ionospheric current at low latitudes

mag.eastw.
current
density



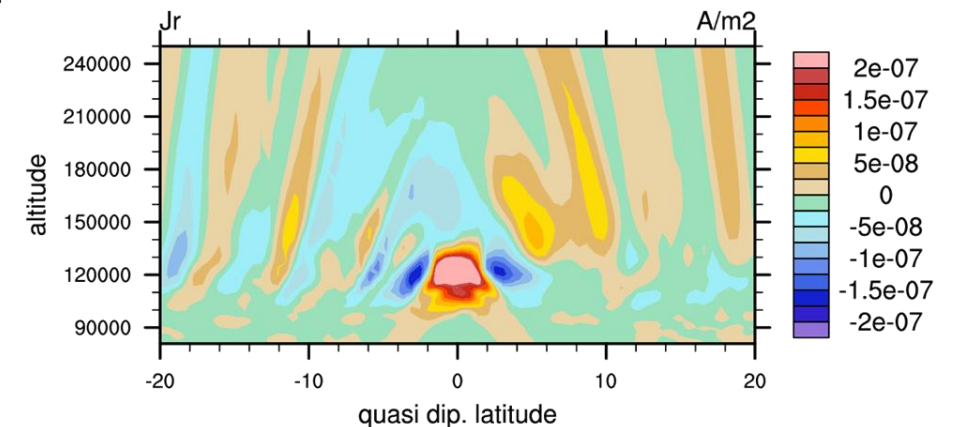
WacxHr Gamera: Jf2hor doy:ut:mn=236:3:18 qdlon=-175

mag.northw.
current
density



Radial current
density

WacxHr Gamera: Jr doy:ut:mn=236:3:18 qdlon=-175



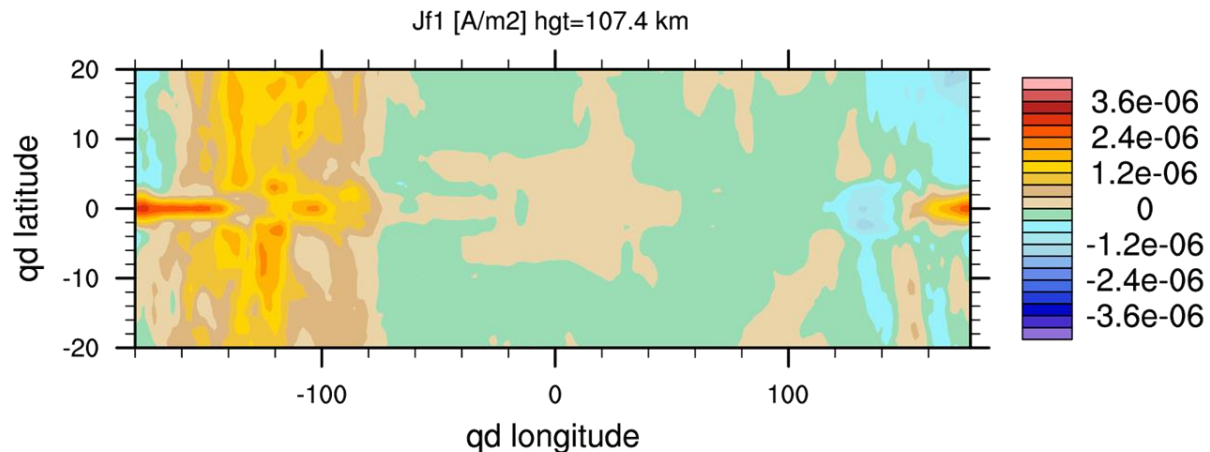
**Within 7 min at low latitude
there is some change but no
major one- dB probably does
not show a change.**

~3 UT 0min

2005 doy:ut:min = 236:3:0

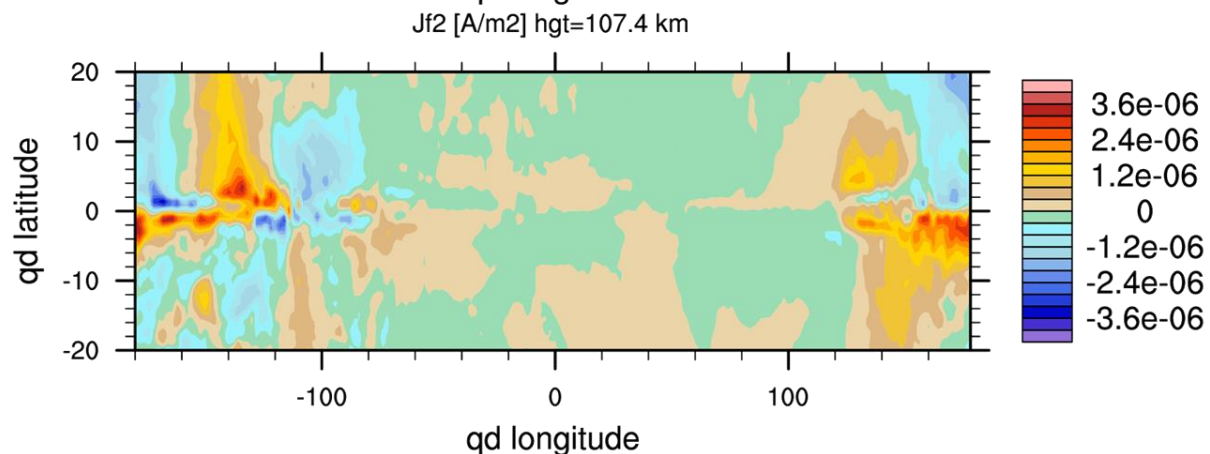
At 107km

mag.eastw.
current
density

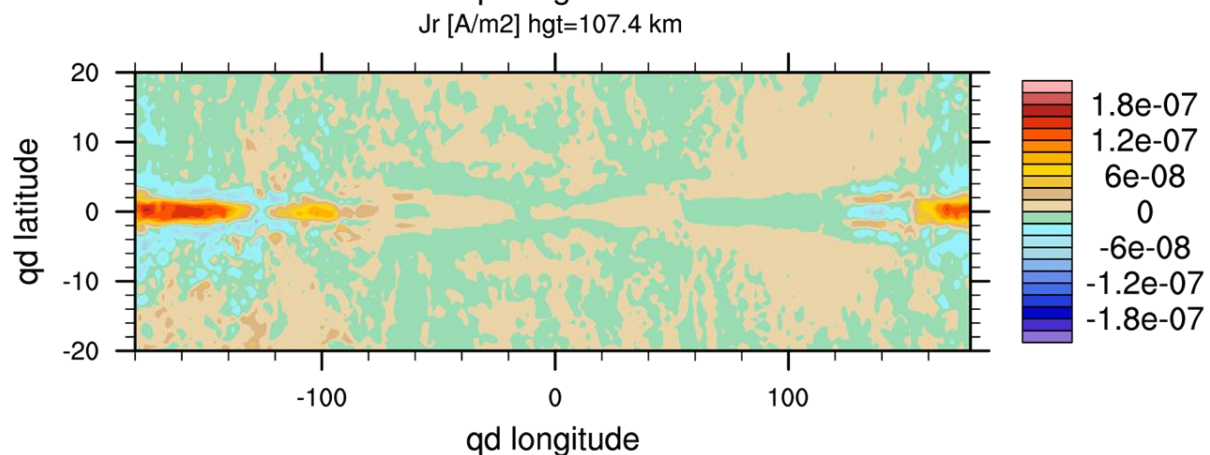


Ionospheric current density
at low latitude

mag.northw.
current
density



Radial current
density



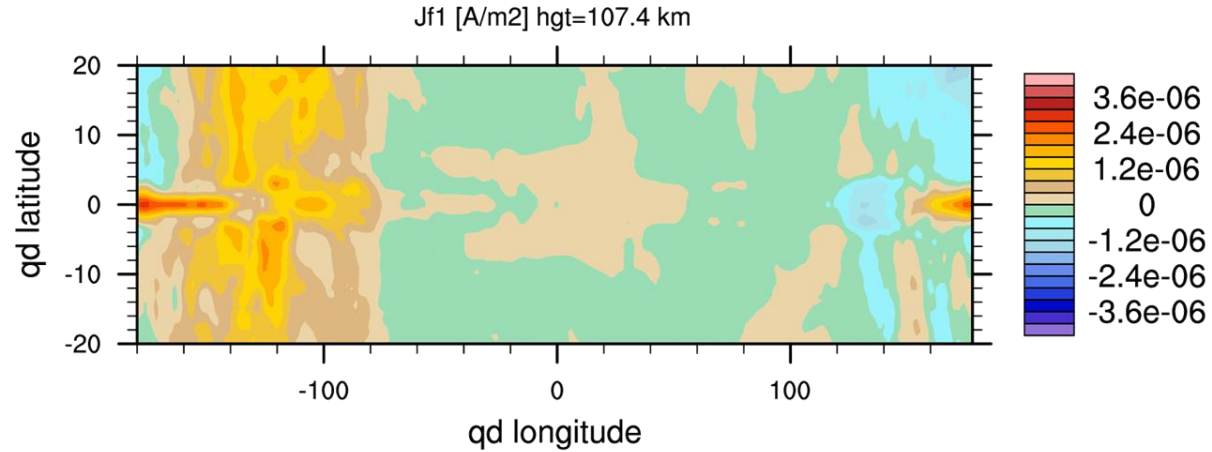
01/29/2023

~3 UT 1min

2005 doy:ut:min = 236:3:1

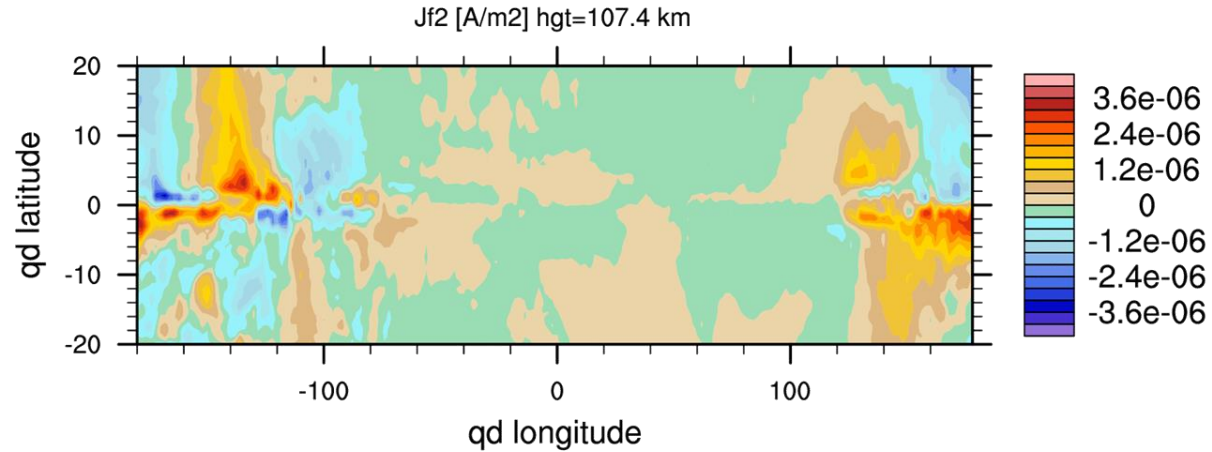
At 107km

mag.eastw.
current
density



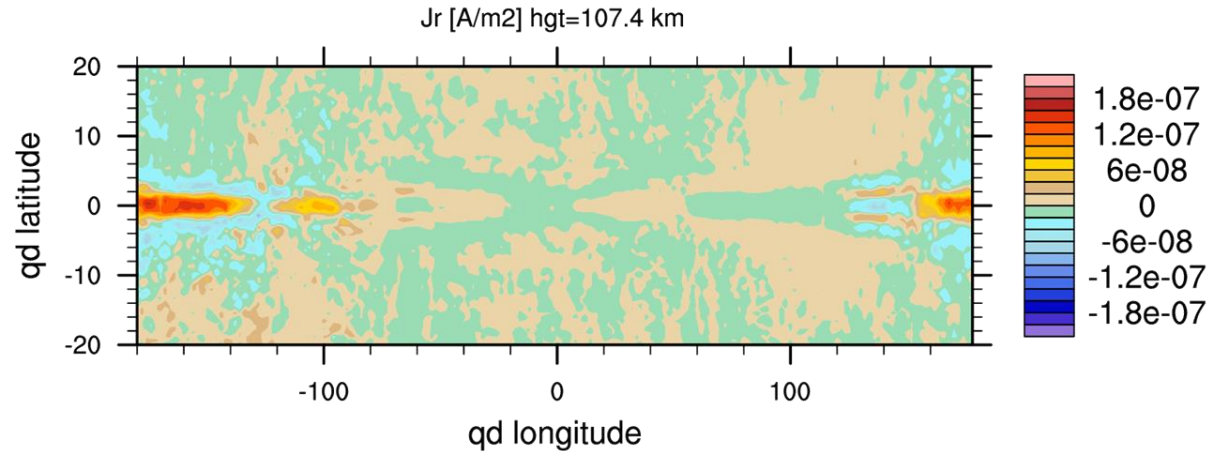
Ionospheric current density
at low latitude

mag.northw.
current
density



Not much change in 1min

Radial current
density



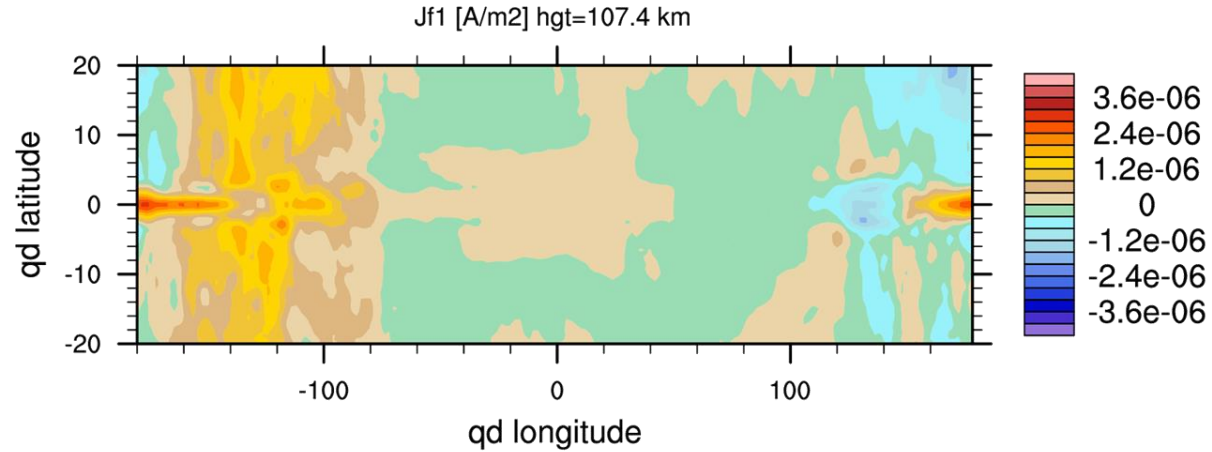
01/29/2023

~3 UT 18min

2005 doy:ut:min = 236:3:18

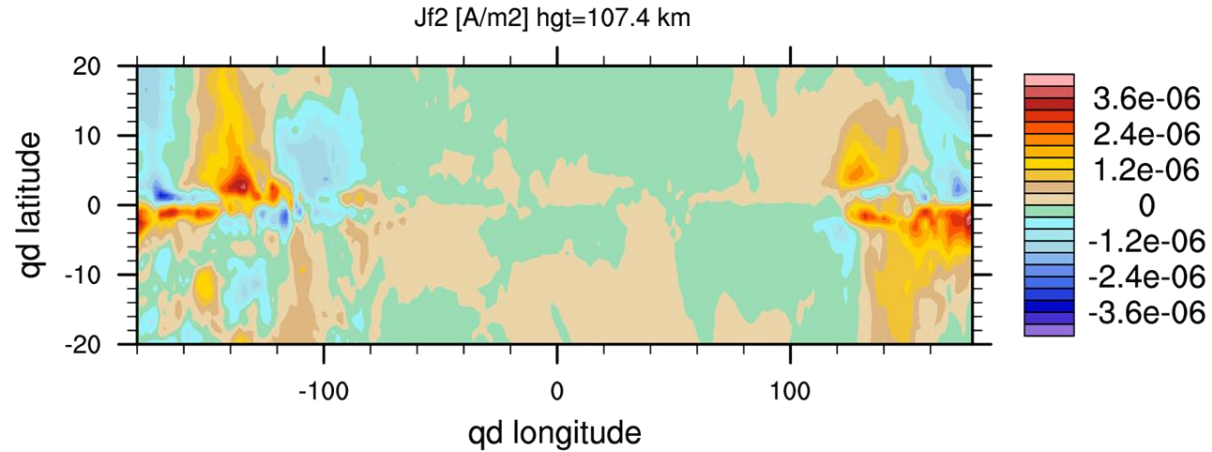
At 107km

mag.eastw.
current
density



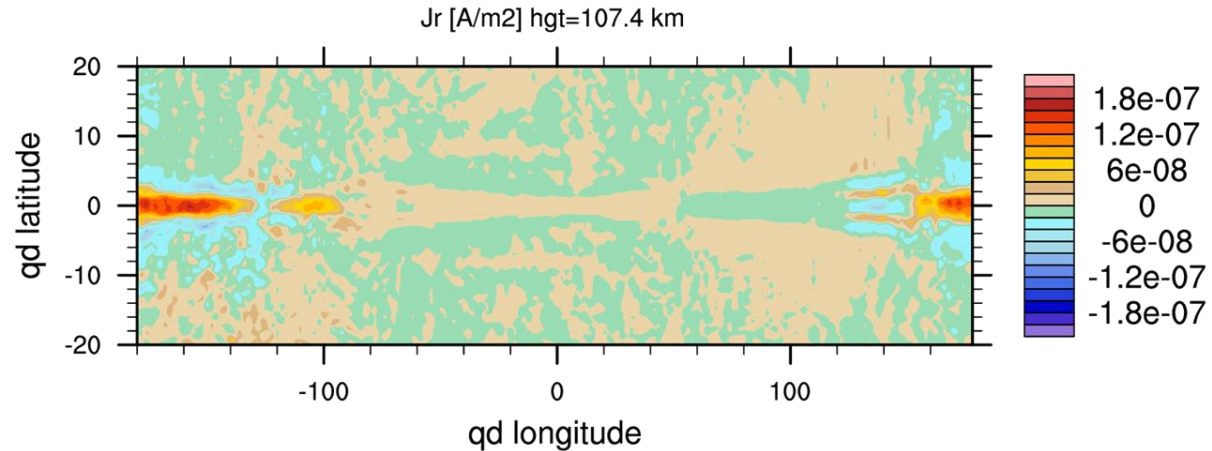
Ionospheric current density
at low latitude

mag.northw.
current
density



Not much change in 17min

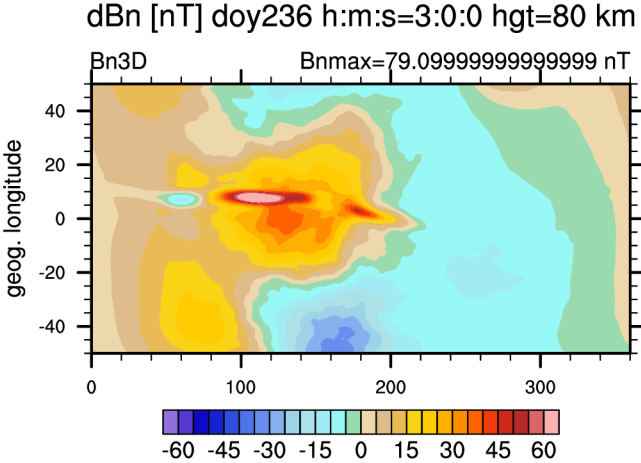
Radial current
density



01/29/2023

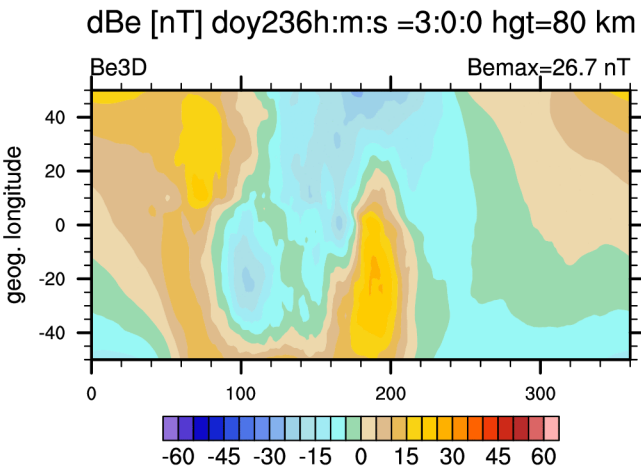
Magnetic perturbation at 80km

~3 UT 0min northward dB

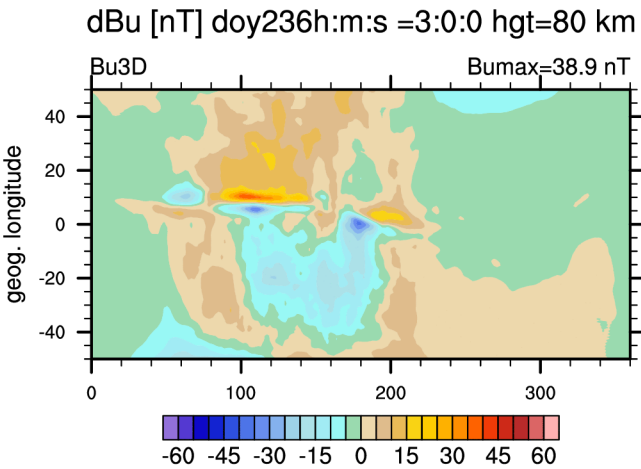


Magnetic perturbation at low latitude

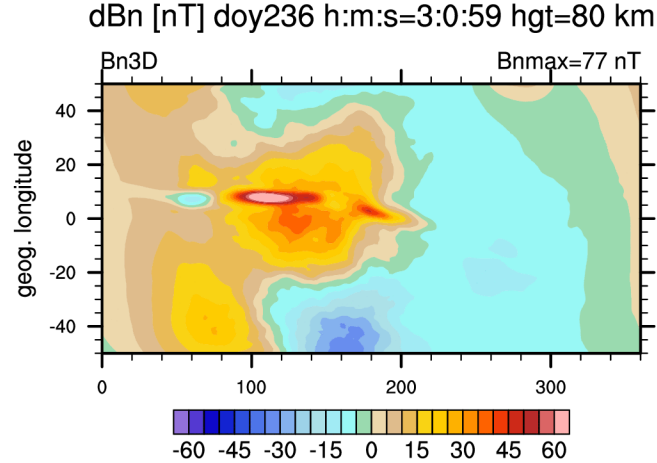
eastward dB



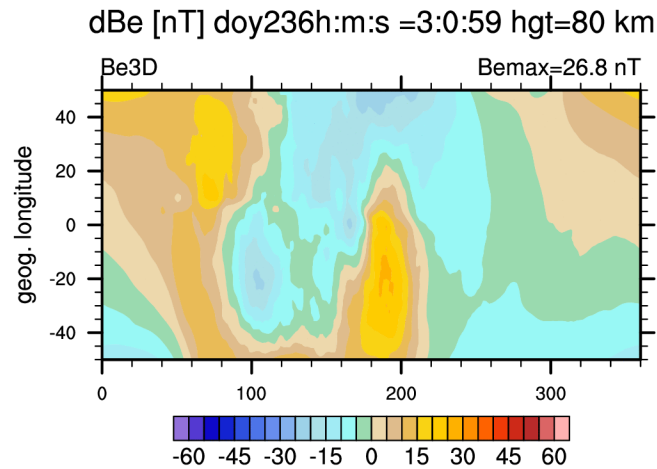
upward dB



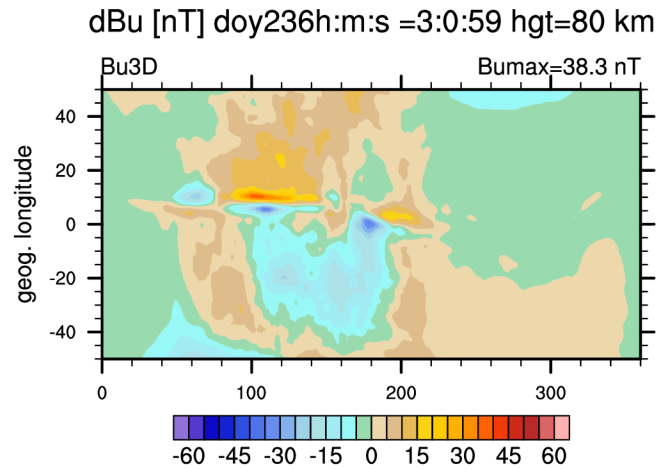
Magnetic perturbation at 80km
~3 UT 1min northward dB



eastward dB



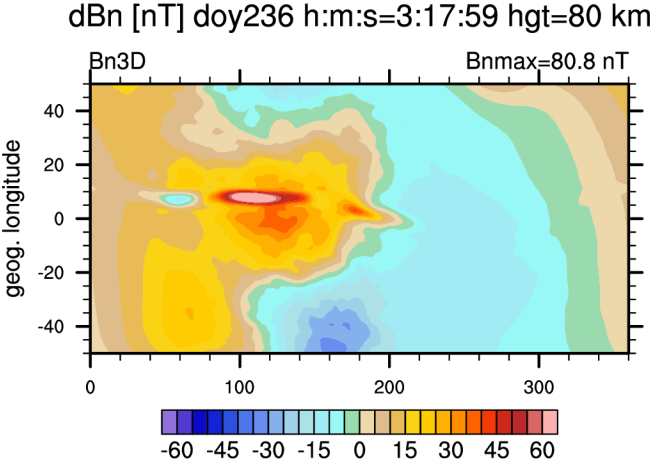
upward dB



Magnetic perturbation at low latitude

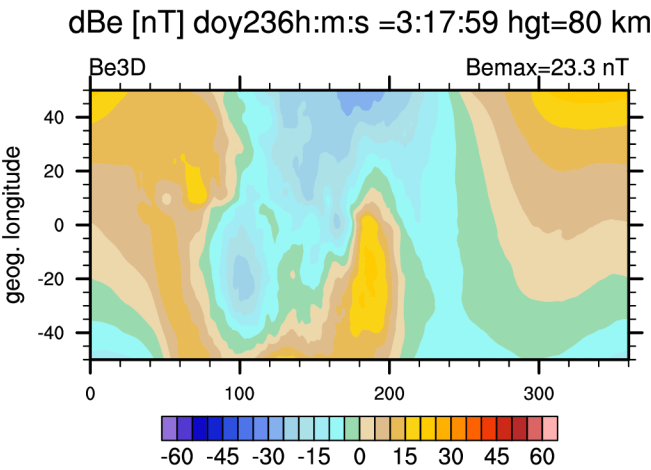
dB is not changing much on these large scales, maybe if zoomed in but magnitude is “only” around 80nT in dBn.

Magnetic perturbation at 80km
~3 UT 18min northward dB

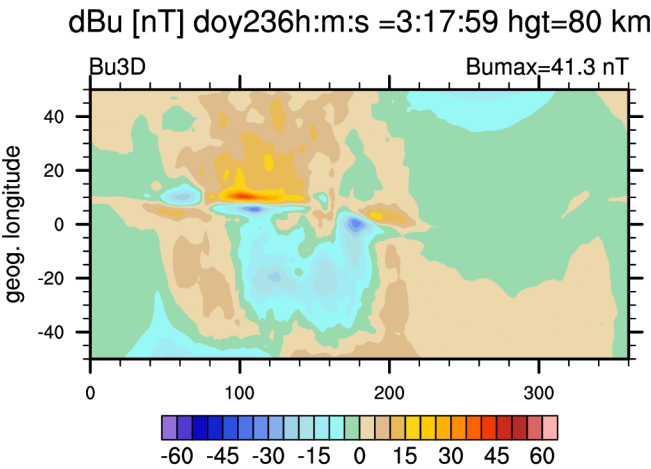


Magnetic perturbation at low latitude

eastward dB



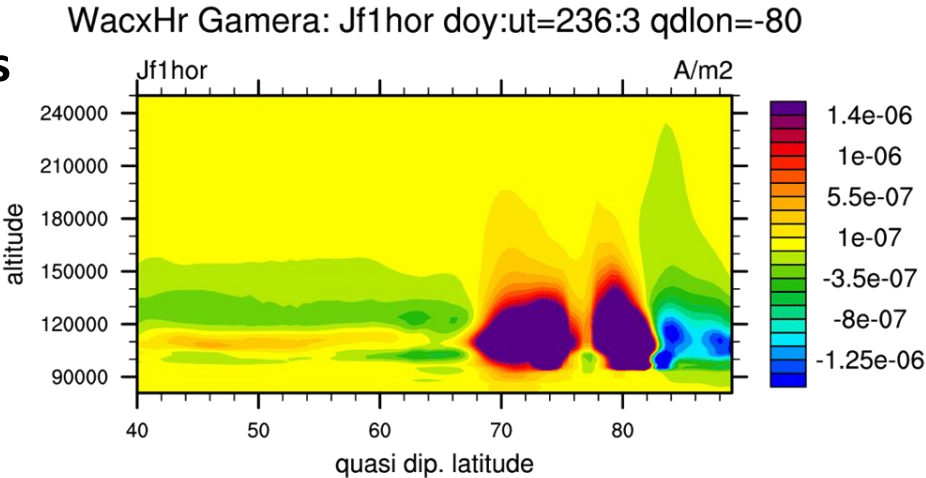
upward dB



Ionospheric current at high latitudes

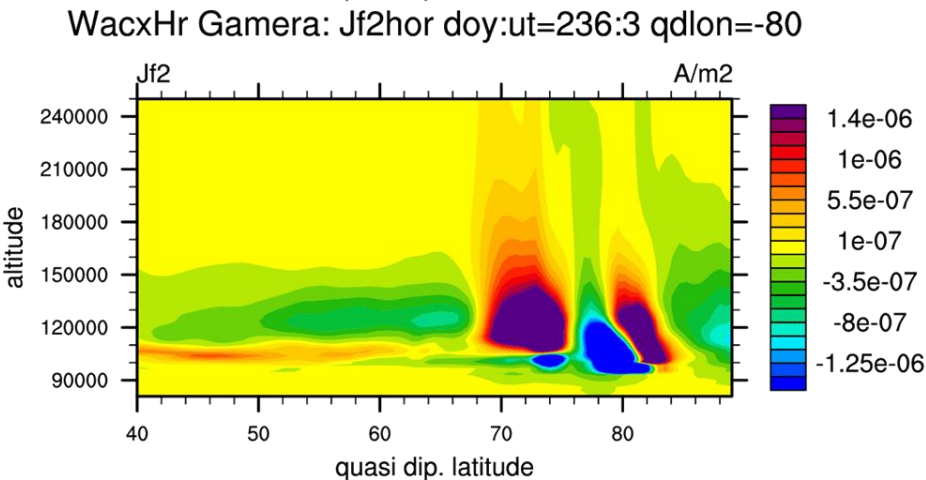
~3 UT 0min

mag.eastw.
current
density

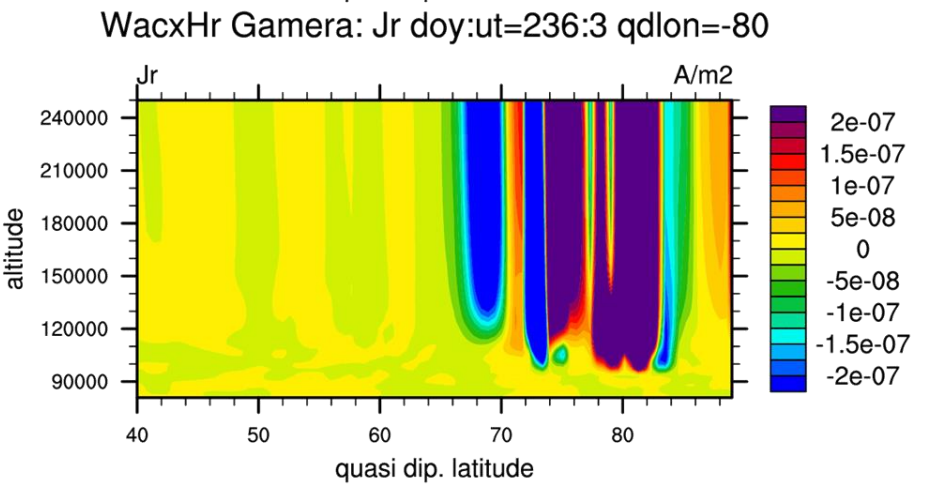


80-250km & 40-90N
At qdlon=-80

mag.northw.
current
density



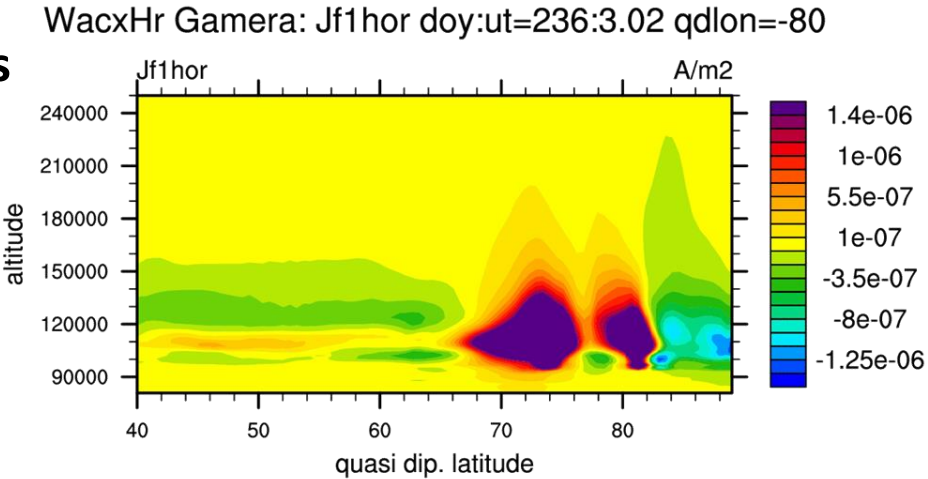
Radial current
density



Ionospheric current at high latitudes

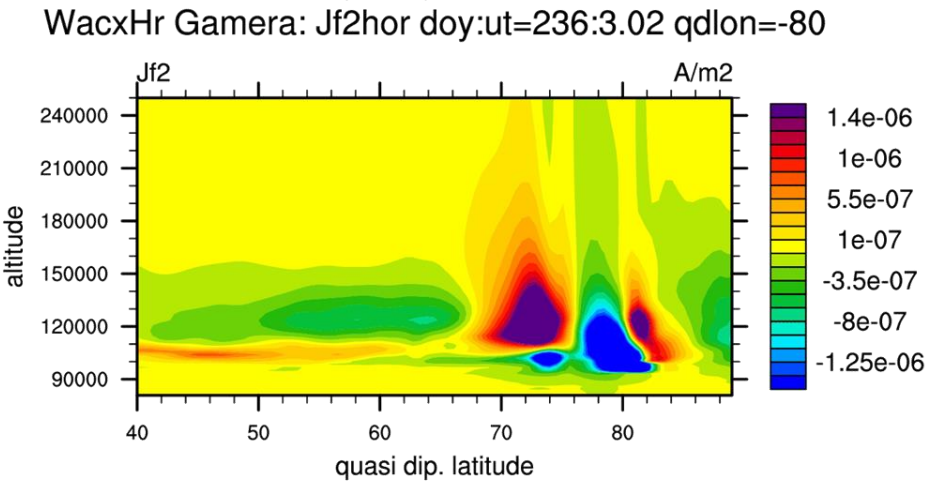
~3 UT 1min

mag.eastw.
current
density

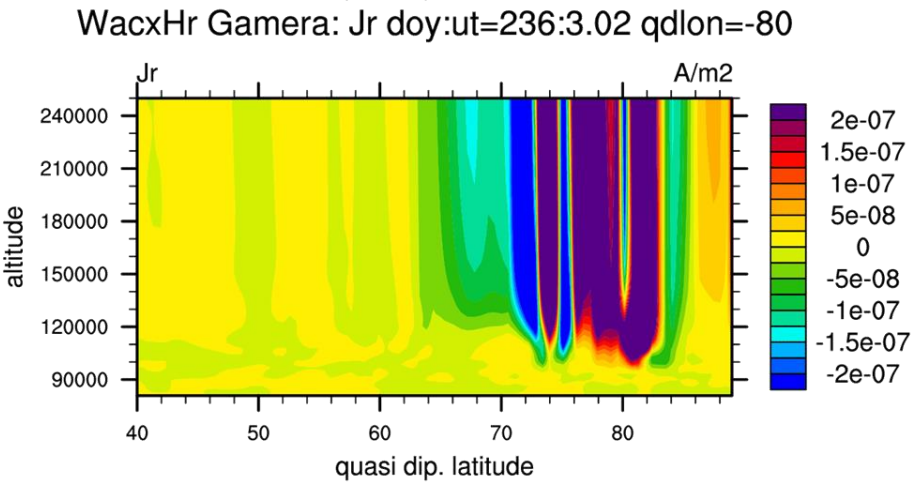


80-250km & 40-90N
At qdlon=-80

mag.northw.
current
density



Radial current
density

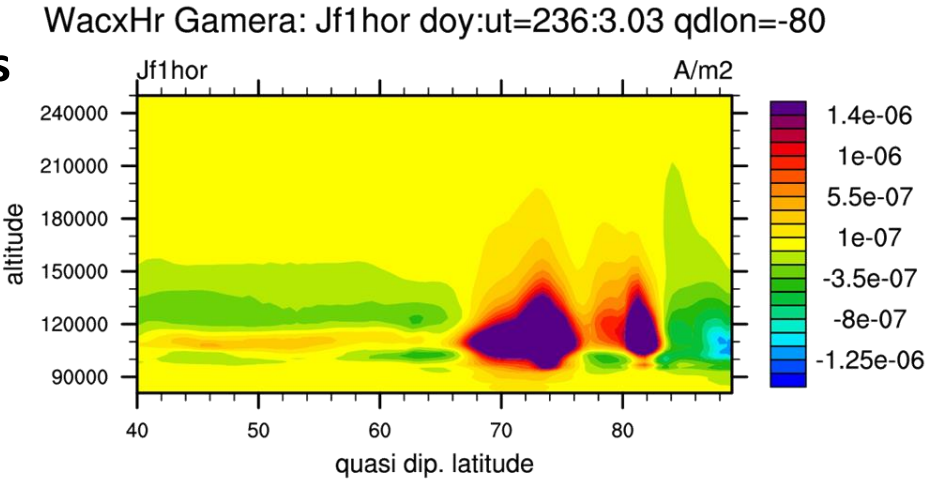


Changes within 1 min in the
ionospheric current but these
might not show up in the dB

Ionospheric current at high latitudes

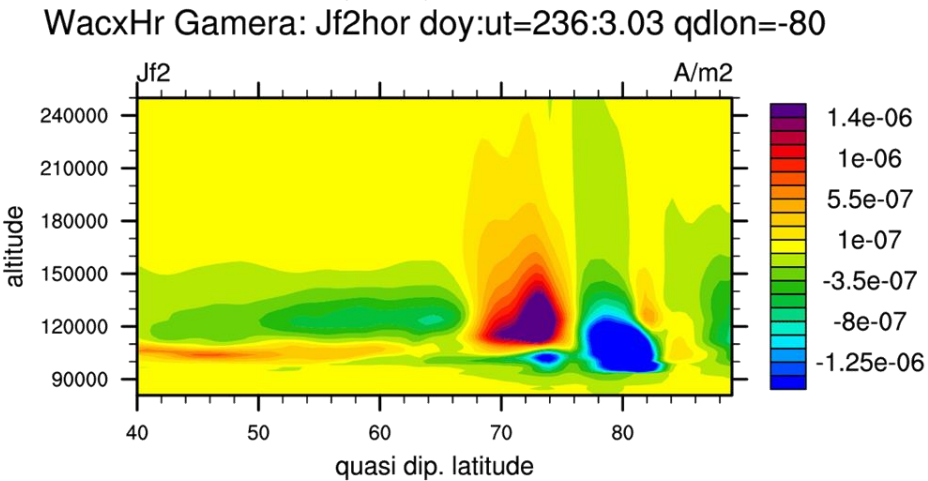
~3 UT 2min

mag.eastw.
current
density

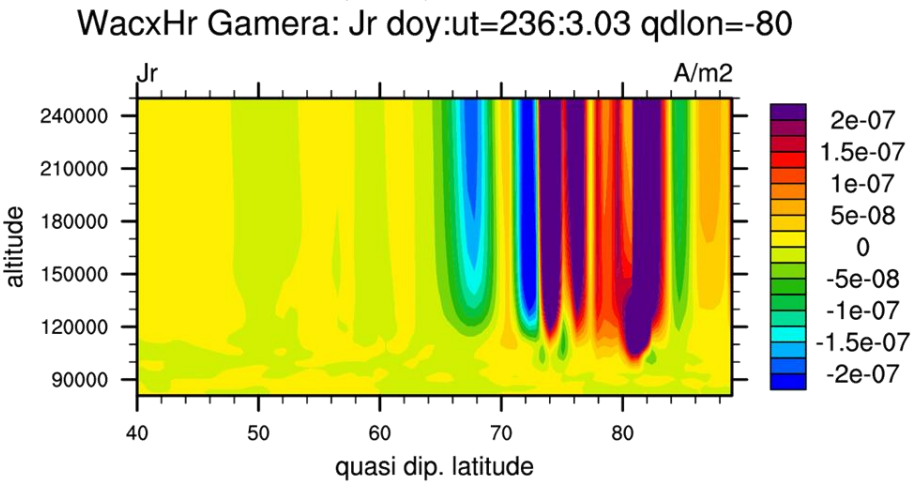


80-250km & 40-90N
At qdlon=-80

mag.northw.
current
density

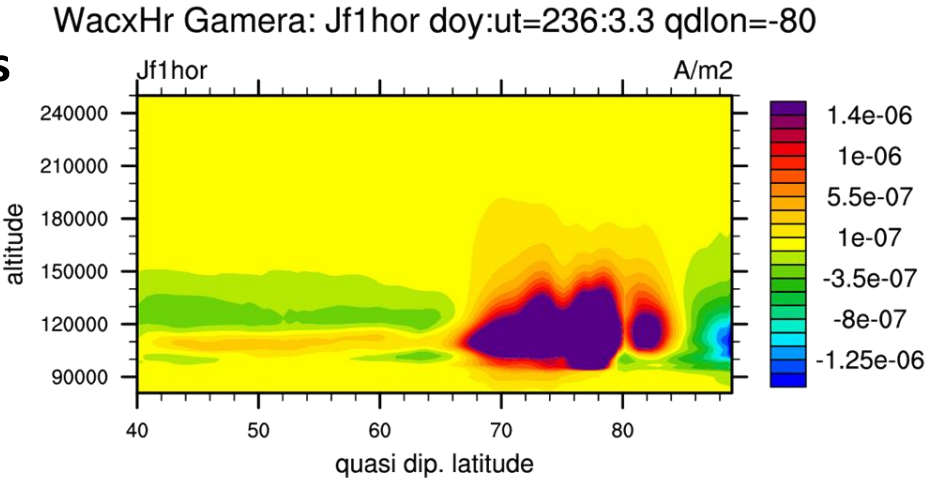


Radial current
density



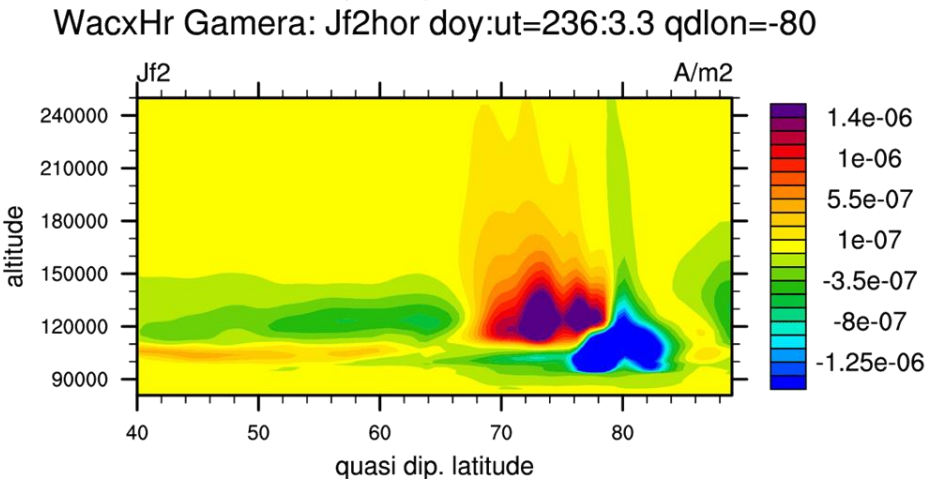
Ionospheric current at high latitudes

~3 UT 18min mag.eastw.
current
density

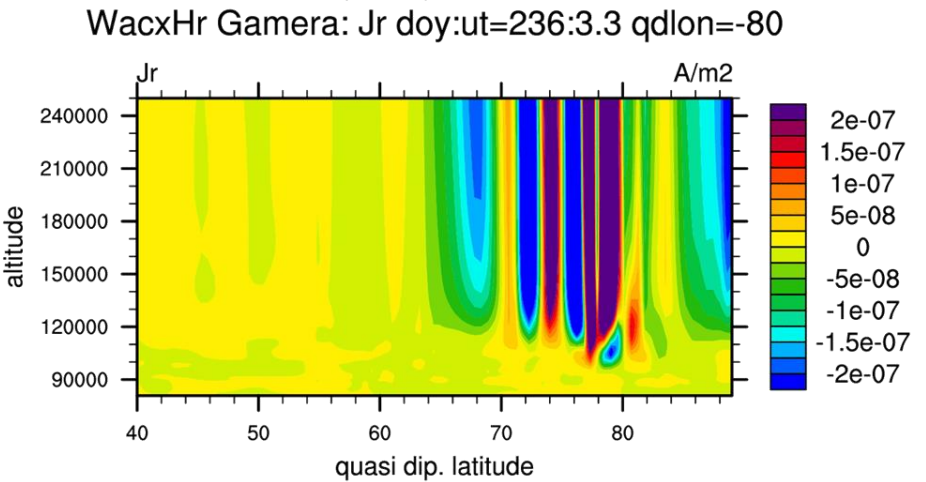


80-250km & 40-90N
At qdlon=-80

mag.northw.
current
density



Radial current
density



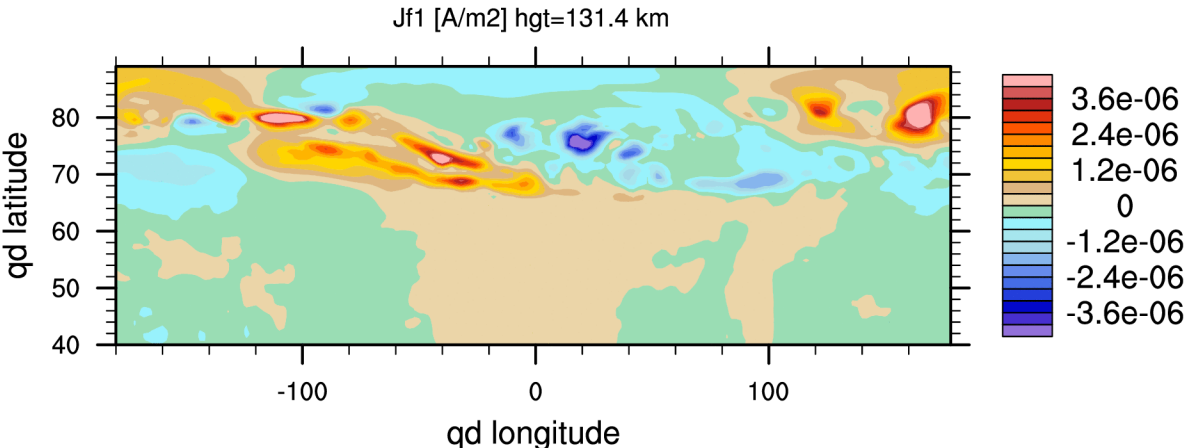
Ionospheric current at high latitudes

2005 doy:ut:min = 236:3:0

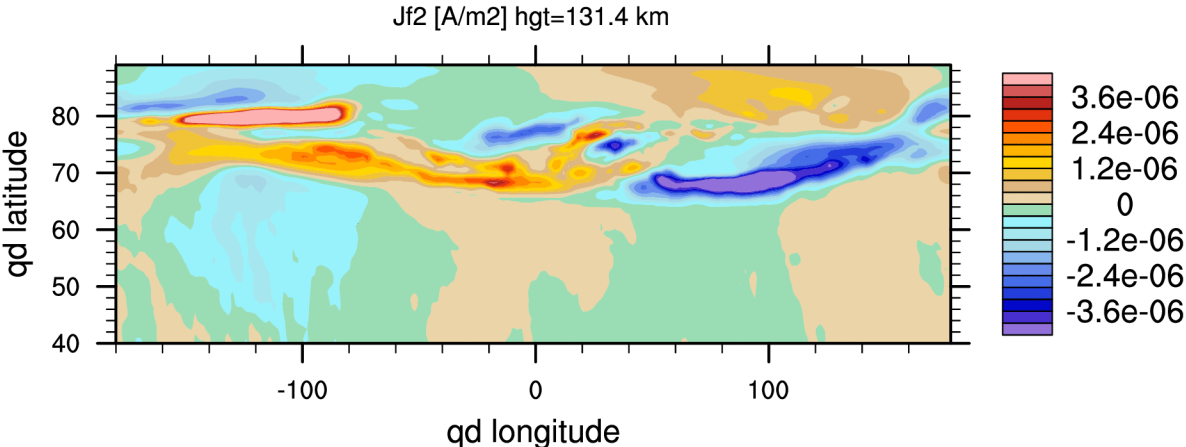
40-90N
At 131km

~3 UT 0min

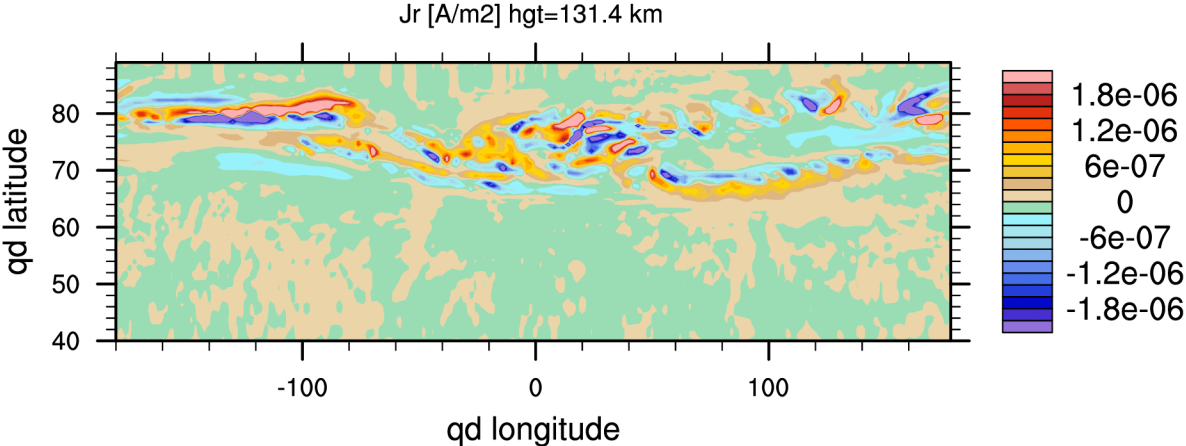
mag.eastw.
current
density



mag.northw.
current
density



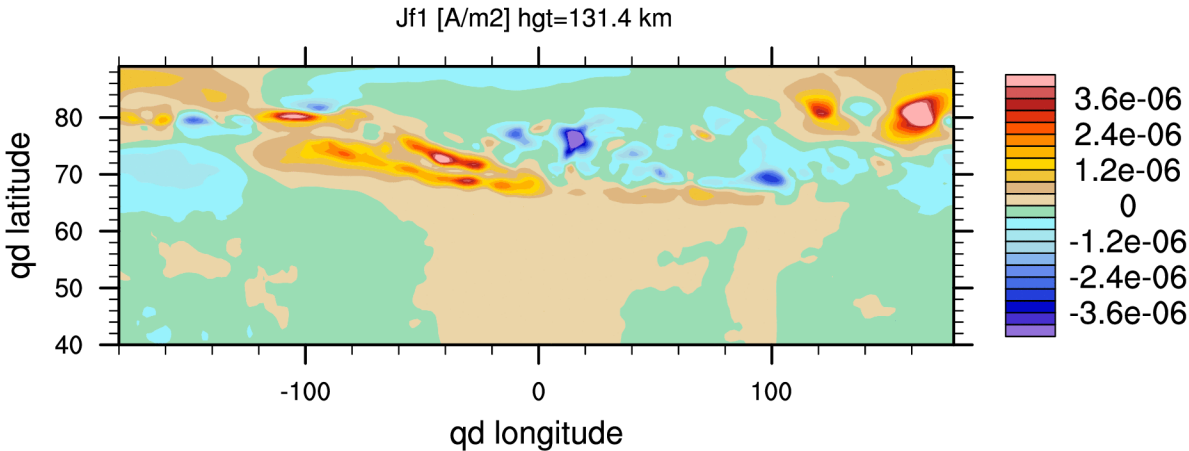
Radial current
density



Ionospheric current at high latitudes /:ut:min = 236:3.016666650772095:0.9999990463256836

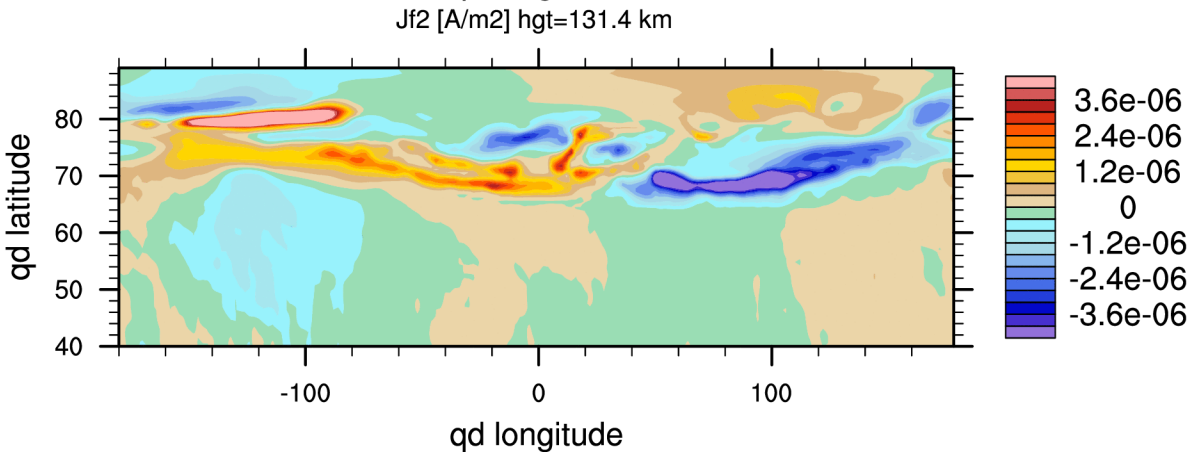
~3 UT 1min

mag.eastw.
current
density

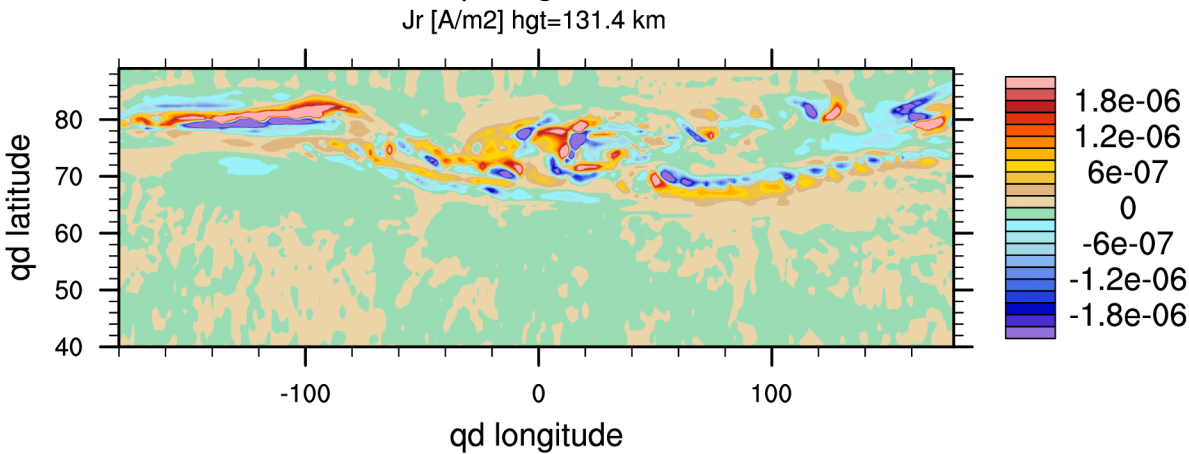


40-90N
At 131km

mag.northw.
current
density



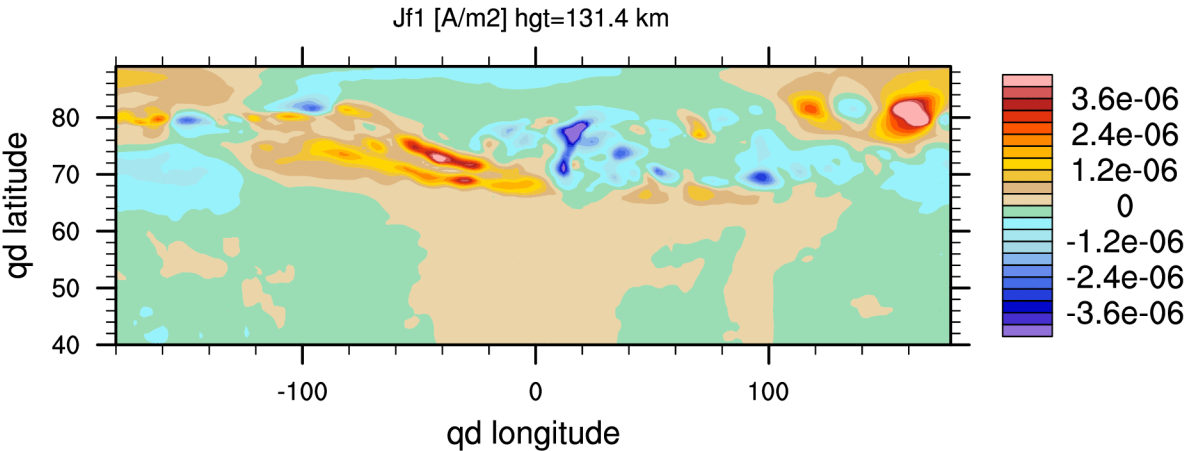
Radial current
density



Ionospheric current at high latitudes y:ut:min = 236:3.033333301544189:1.999998092651367

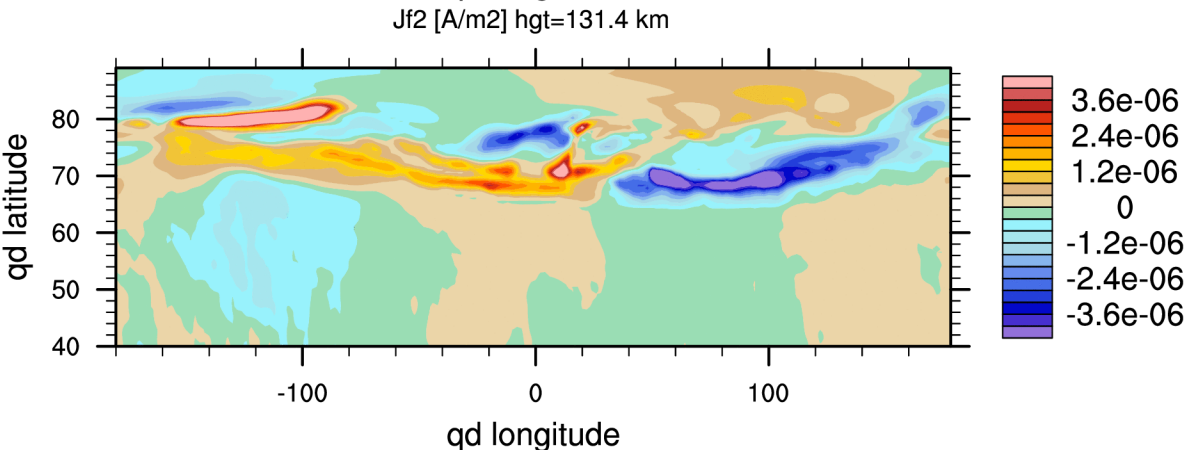
~3 UT 2min

mag.eastw.
current
density

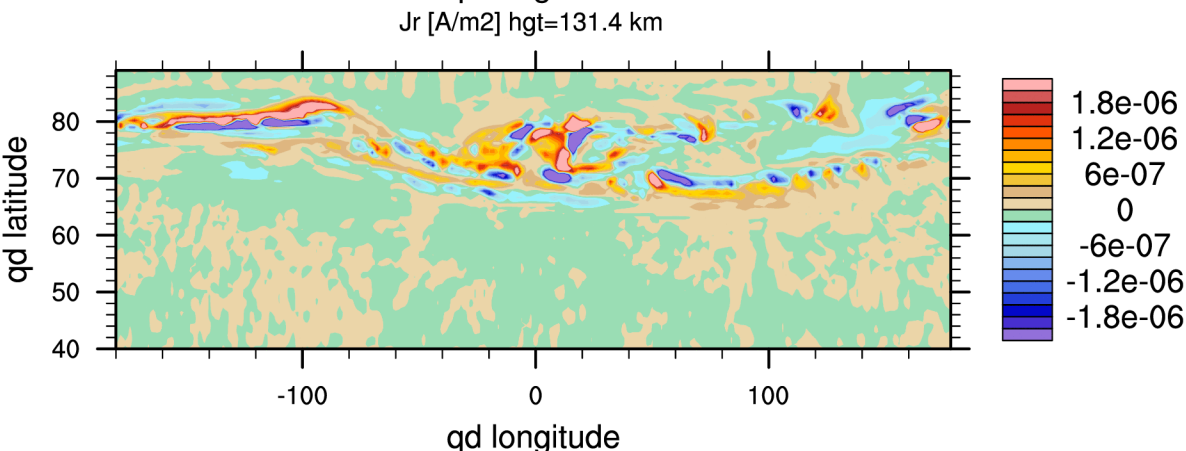


**40-90N
At 131km**

mag.northw.
current
density



Radial current
density



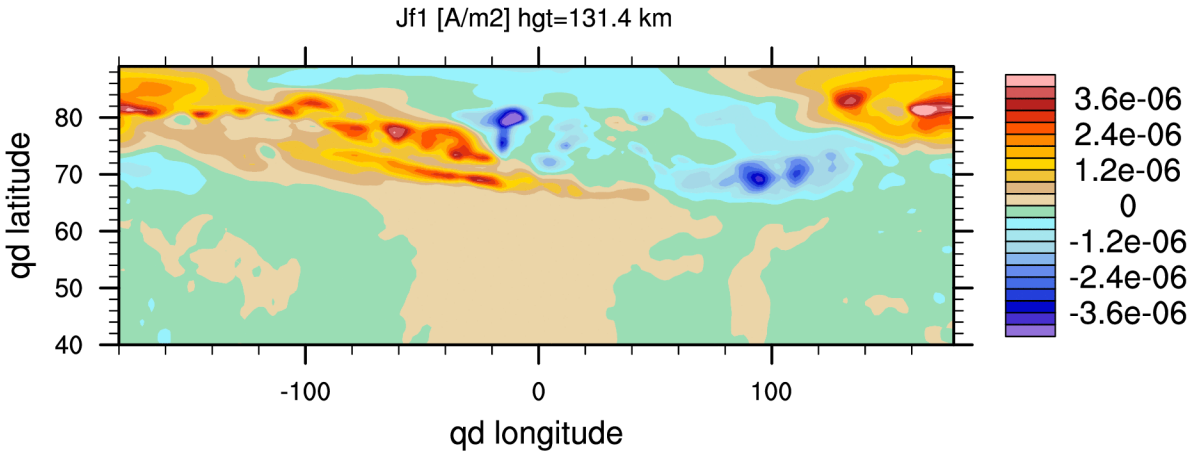
**Not much change with
1 min at 131 km**

Ionospheric current at high latitudes

y:ut:min = 236:3.299999952316284:17.99999713897705

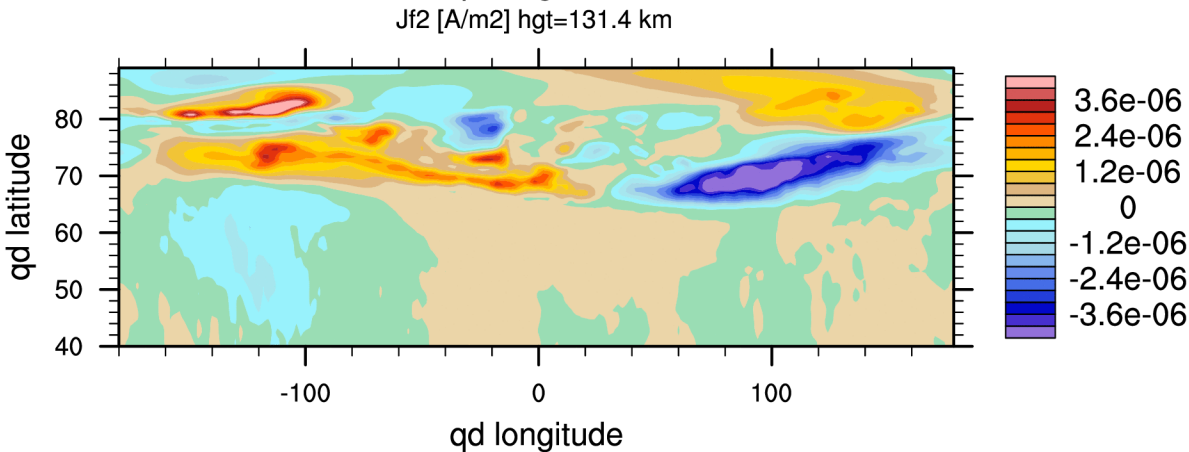
~3 UT 18min

mag.eastw.
current
density

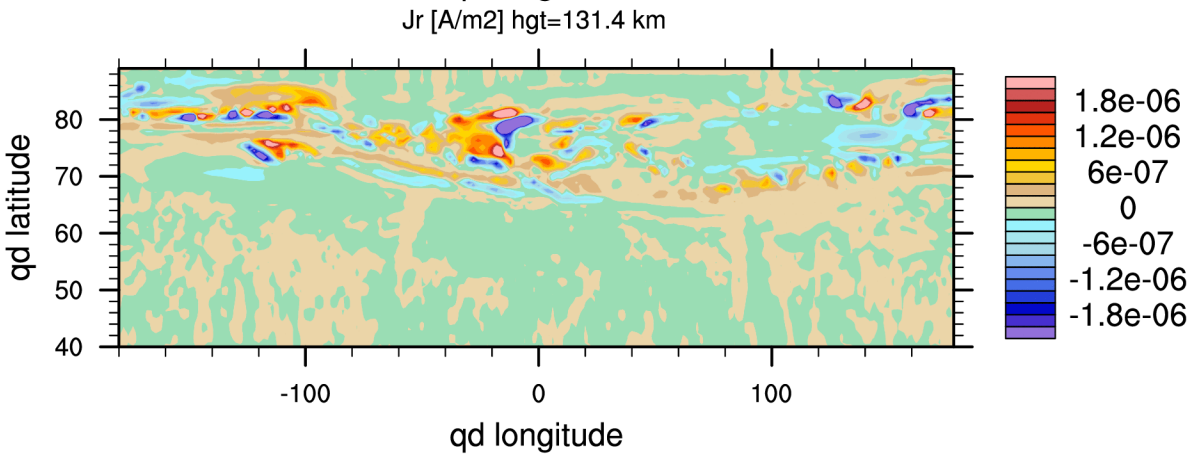


40-90N
At 131km

mag.northw.
current
density



Radial current
density

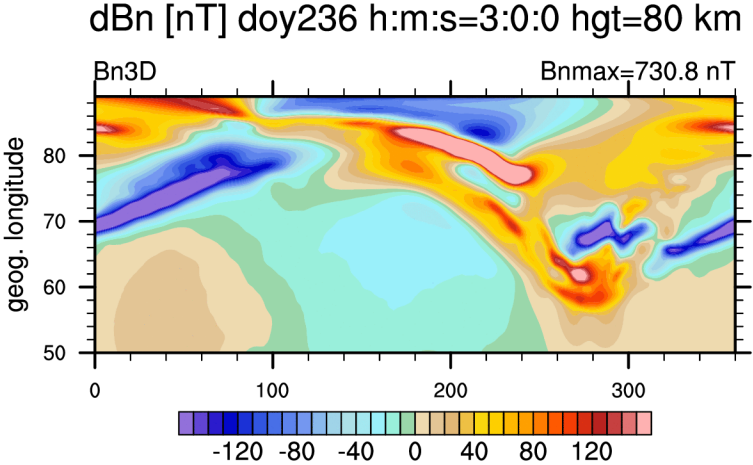


change with 16 min at
131 km

Magnetic perturbation at high latitudes

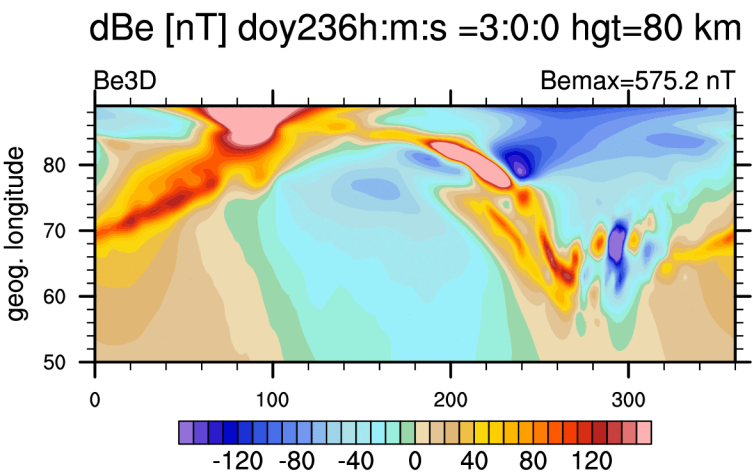
~3 UT 0min

dB_north

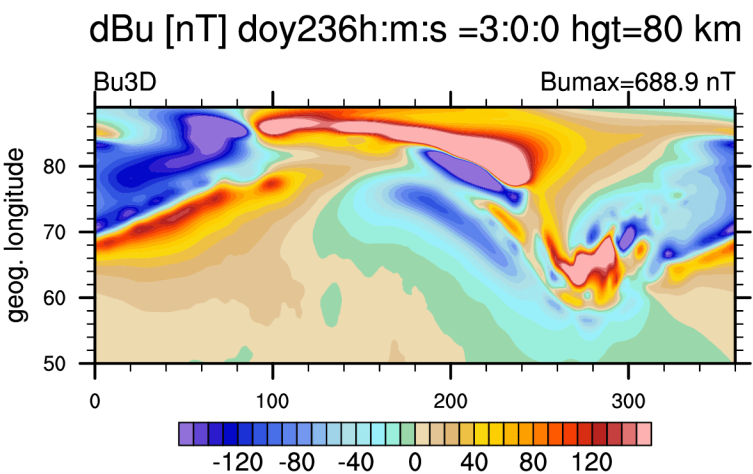


50-90N & 0-360
At 80km

dB_east



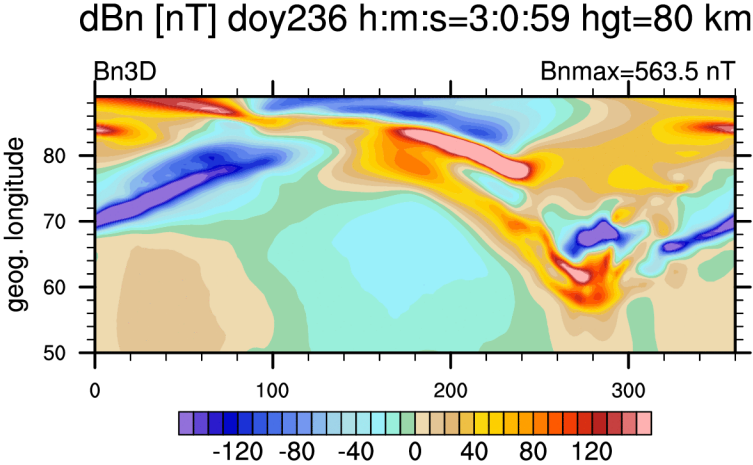
dB_up



Magnetic perturbation at high latitudes

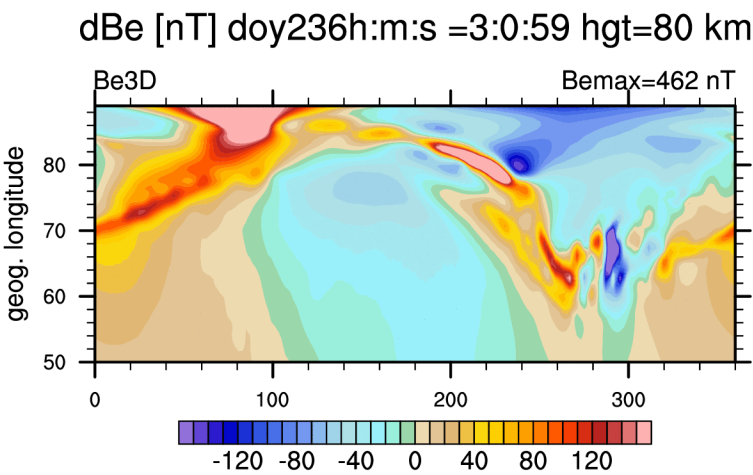
~3 UT 1min

dB_north

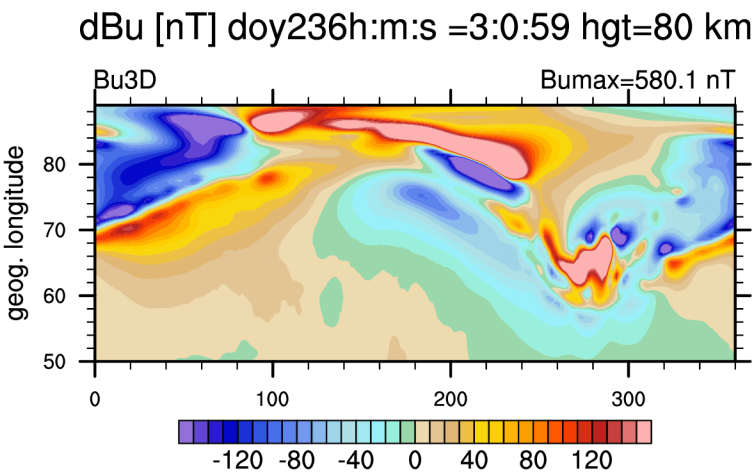


50-90N & 0-360
At 80km

dB_east



dB_up

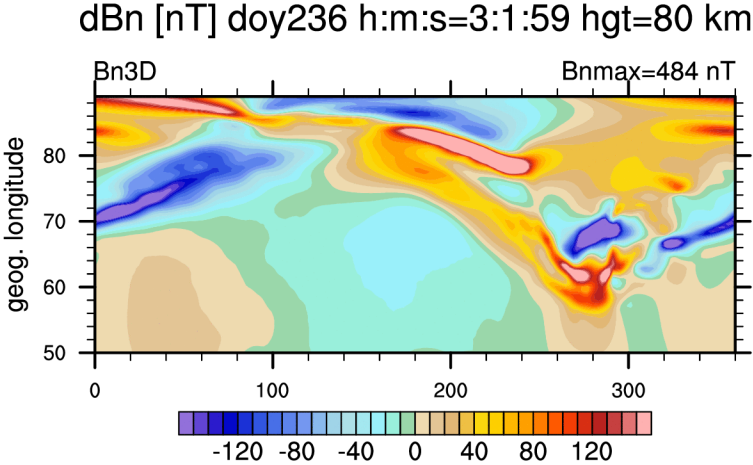


Some change with 1
min but should look at
particular longitude

Magnetic perturbation at high latitudes

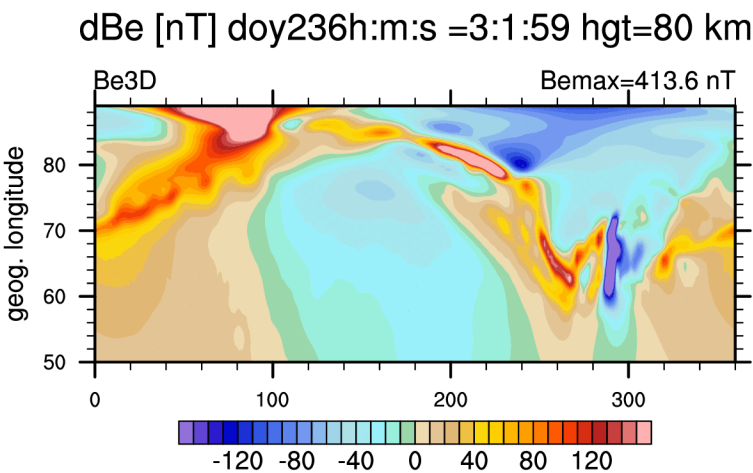
~3 UT 2min

dB_north

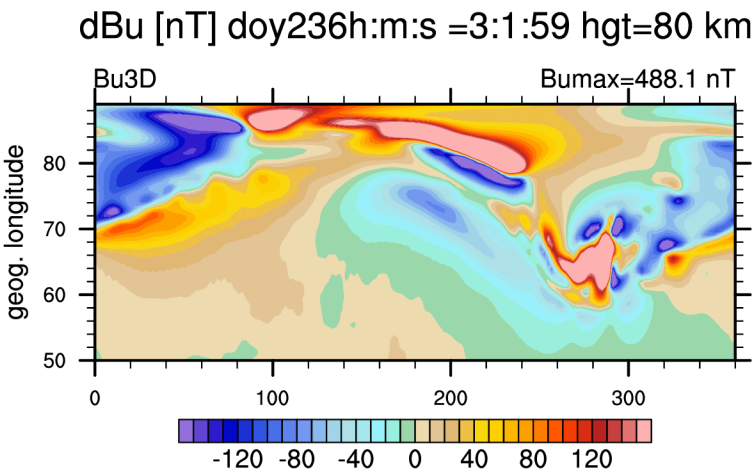


50-90N & 0-360
At 80km

dB_east



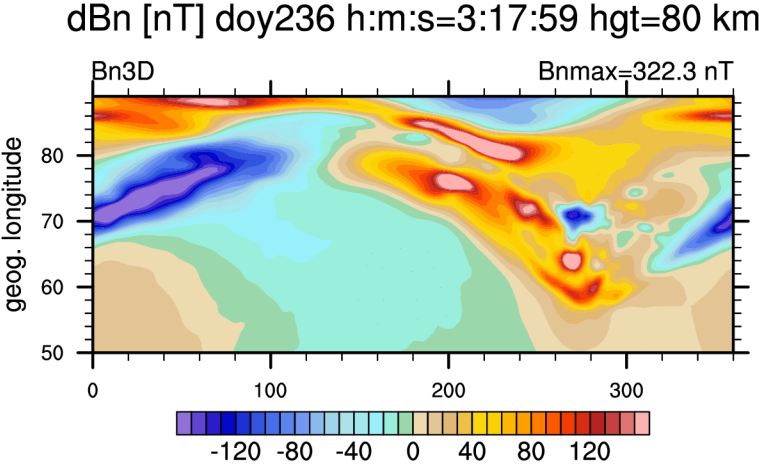
dB_up



Magnetic perturbation at high latitudes

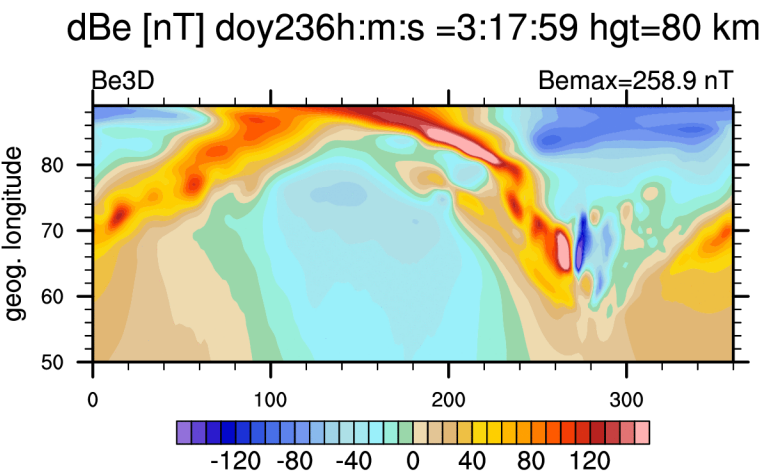
~3 UT 18min

dB_north

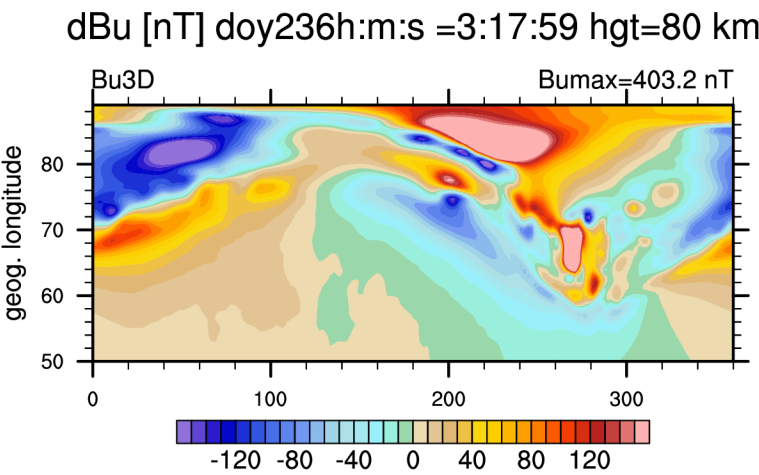


50-90N & 0-360
At 80km

dB_east



dB_up



Significant change with
16 min without
geomagnetic activity

