This is a description of zonal averages of SABER gravity wave (GW)
absolute momentum fluxes, GW squared amplitudes, GW variances,
and temperatures provided for 01 January 2017 until 02 March 2017.

Zonal averages of SABER GWs and background temperatures were determined
for latitude bins of 20deg width, latitude step is 2deg.
Data are provided for altitudes from 30 to 90km in 1-km steps.
The zonal averages are 3-day averages with a time step of 1 day.

The time series are stored in a NetCDF file. File name:

saber_daily_zonal_averages_170101-170302.nc

PARAMETERS PROVIDED IN THE NetCDF FILE:

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(1) SABER gravity wave (GW) parameters:

- GW temperature squared amplitudes in K^2
  parameter name: GW_TEMP_AMPSQ_SINGLE_ZAV_SERIES_SABER
  dimensions: (n_lat,n_altitudes,n_times)

- GW temperature variance in K^2
  parameter name: GW_TEMP_VAR_ZAV_SERIES_SABER
  dimensions: (n_lat,n_altitudes,n_times)

- absolute GW momentum fluxes in Pa
  parameter name: GWMF_ZAV_SERIES_SABER_PA
  dimensions: (n_lat,n_altitudes,n_times)

- temperature in K averaged over the same bin as the GW parameters
  parameter name: TEMP_ZAV_SERIES_SABER
  dimensions: (n_lat,n_altitudes,n_times)

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(2) additional information in the NetCDF files:

- altitude in km
  parameter name: Z_GRID_ZAV_SABER
  dimension: (n_altitudes)

- latitude grid for GW and temperature data
  parameter name: LAT_GRID_ZAV_SABER
  dimension: (n_lat)

- time information in days since 01 January 2002, 00:00 UT
  parameter name: TIME_GRID_ZAV_SERIES_SABER
  dimension: (n_times)

Data are provided for 01 January 2017 until 02 March 2017.
This is the SABER northward viewing period during winter 2016/2017.

01 January 12:00 UT corresponds to TIME_GRID_ZAV_SERIES_SABER=5479.5
02 March 12:00 UT corresponds to TIME_GRID_ZAV_SERIES_SABER=5539.5

KNOWN ISSUES:
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(1) SABER data are relatively sparse. Therefore zonal averages over
short averaging time intervals will be quite noisy.
It should be kept in mind that SABER has 1400 soundings per day.
This is about the number used for GW variances and squared amplitudes.
However, for calculating momentum fluxes only 400 values/day are available
(only every second pair of altitude profiles can be used, in addition
the vertical wavelengths in a pair of profiles have to match,
cf. Ern et al., JGR, 2011)

(2) SABER sometimes produces outliers. Some of them fall into the period
around 1 February 2017.

(3) SABER has enhanced noise in the summer mesopause region.
At altitudes 80-90km enhanced GW activity at the southernmost latitudes
should therefore not be reliable.

(4) Altitude resolution of GW variances is 2km
(this altitude resolution is given by the SABER field of view).
Altitude resolution of GW squared amplitudes and GW momentum fluxes
is 10km, according to the vertical window used for our GW analysis.

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