

Radiosonde Launches at Lauder

Andreas Dörnbrack and Sonja Gisinger

Institut für Physik der Atmosphäre

DLR Oberpfaffenhofen

Markus Garhammer

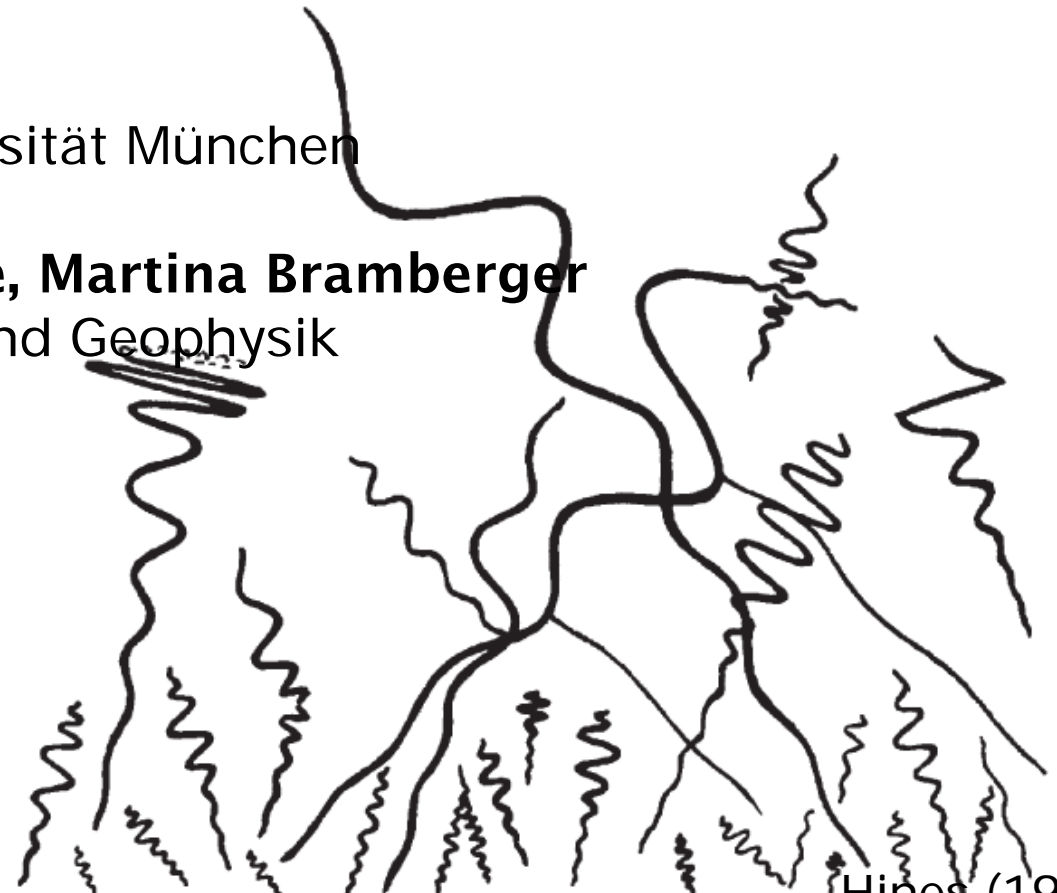
Meteorologisches Institut

Ludwig Maximilians Universität München

Maria Siller, Tanja Portele, Martina Bramberger

Institut für Meteorologie und Geophysik

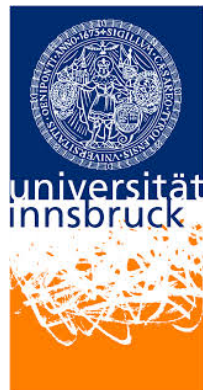
Universität Innsbruck



Hines (1974)



DLR



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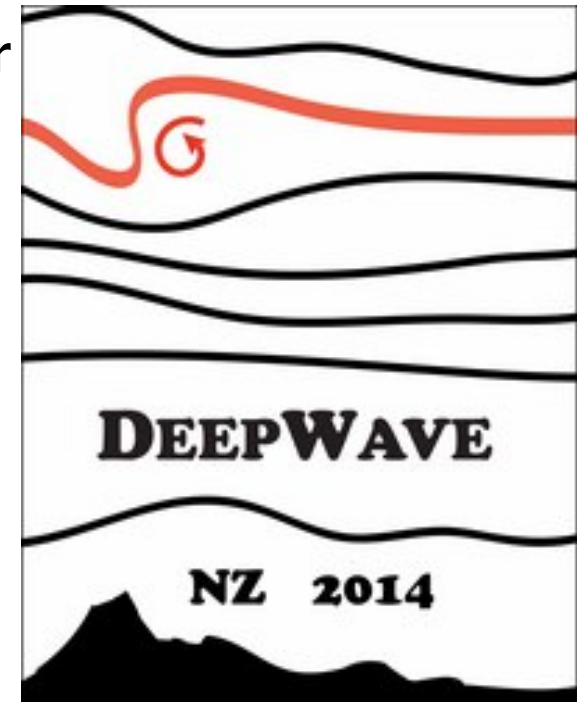
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Lauder 14 June 2014 09 NZST



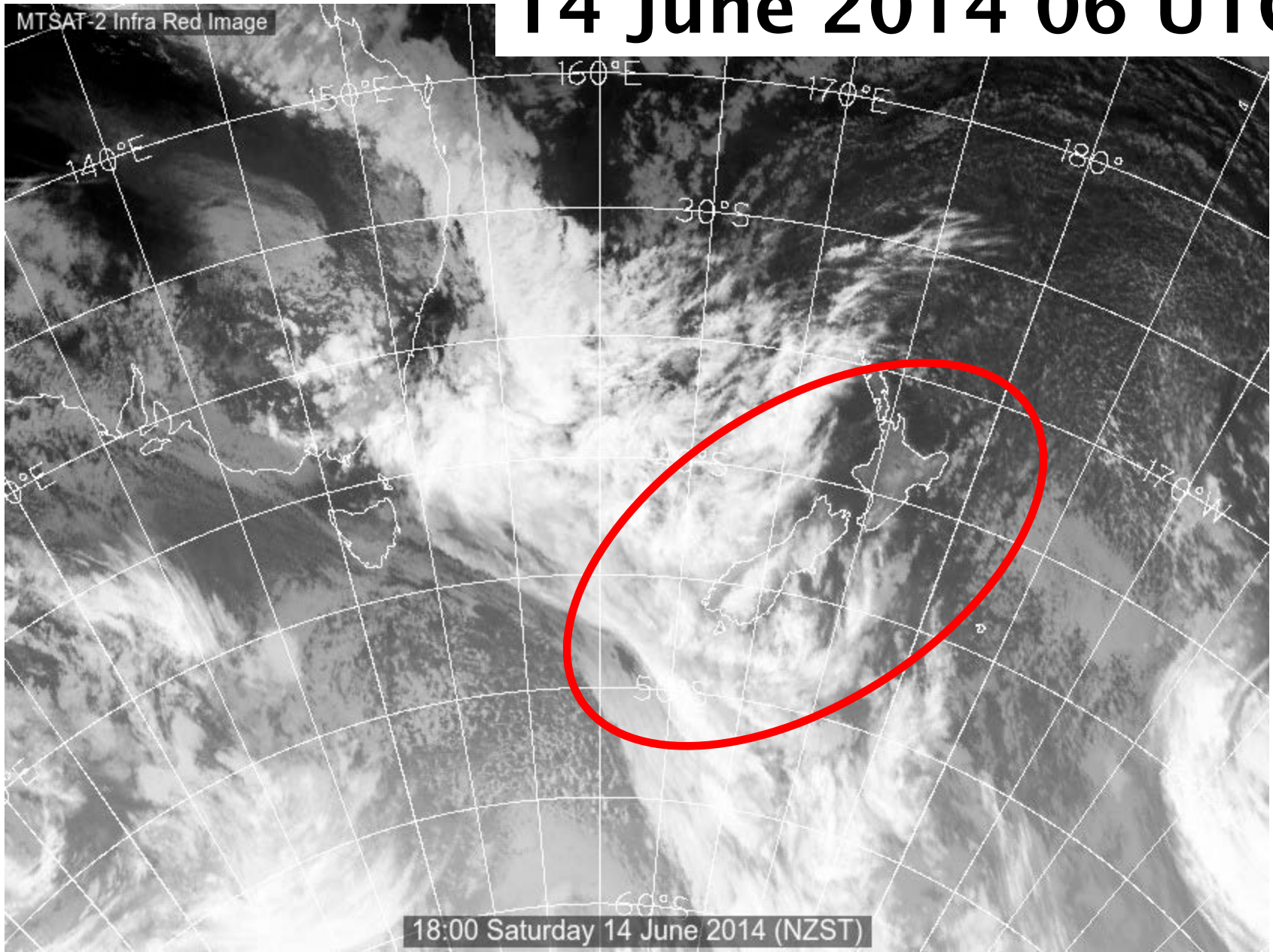
IOP 3

13 June 2014 18 UTC

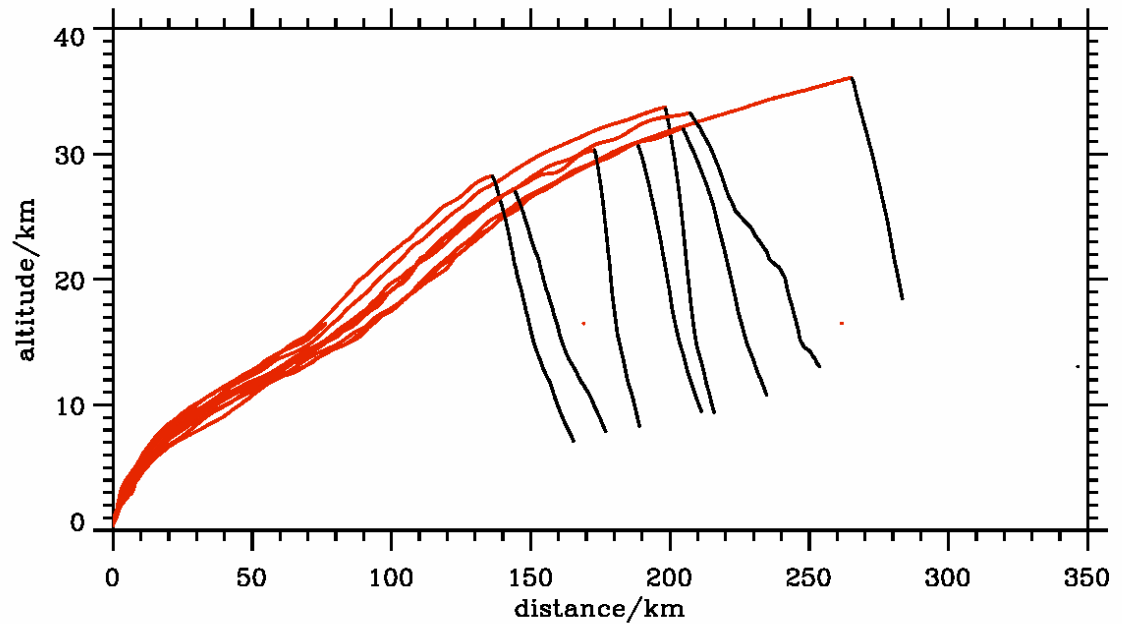
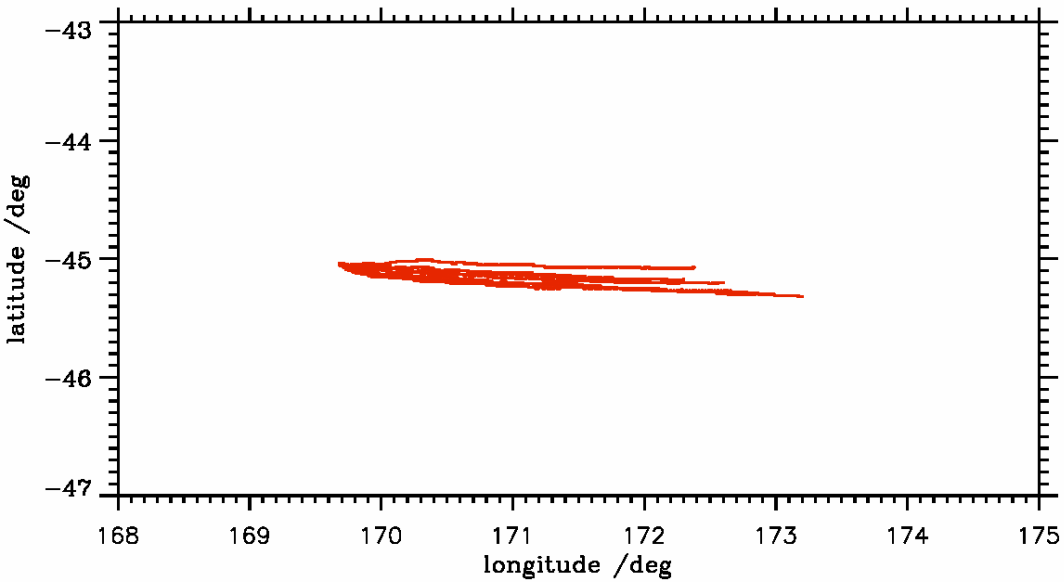
- 14 June 2014 18 UTC

RF04: Observe mountain waves and trailing waves over the South Island

14 June 2014 06 UTC



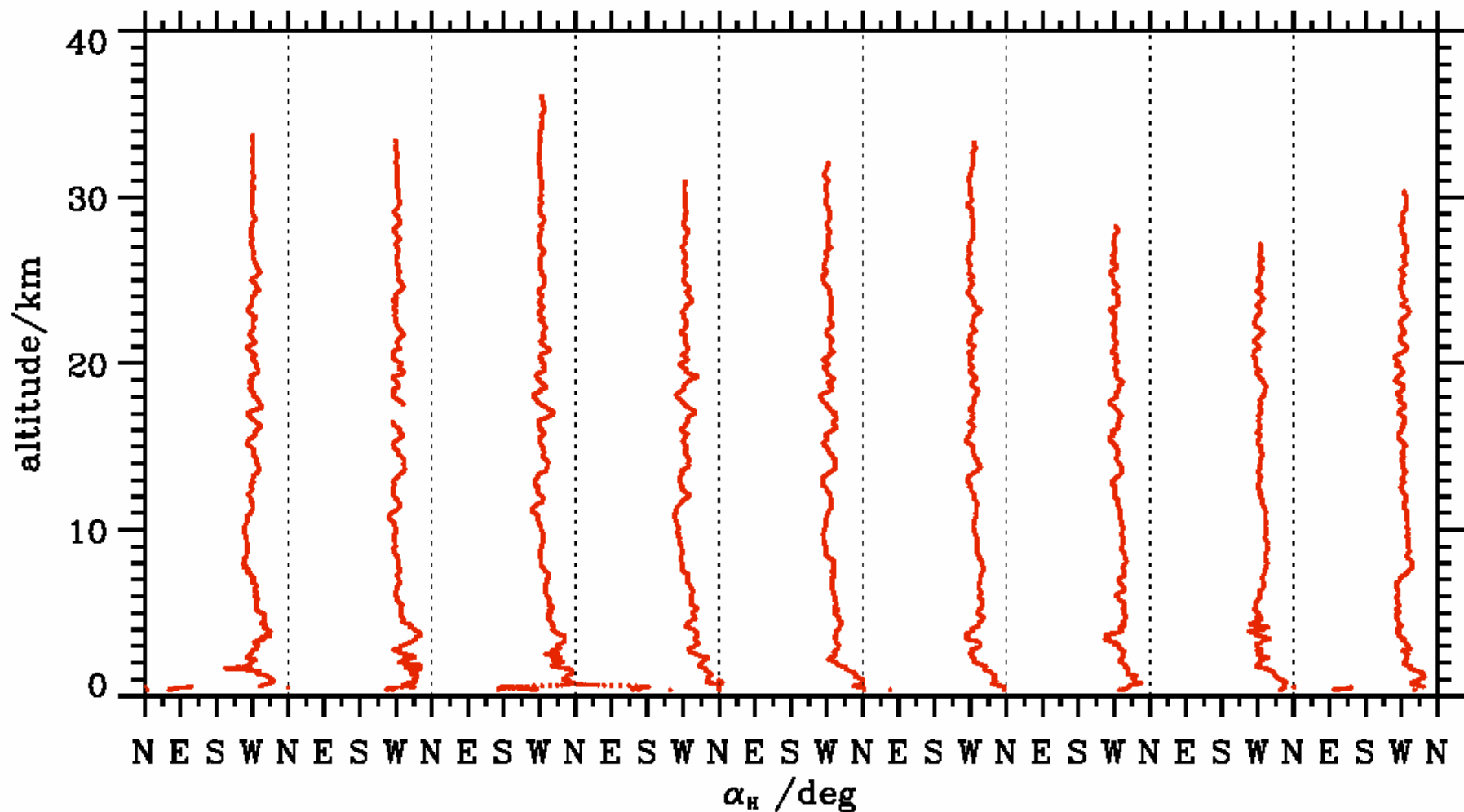
IOP 3: Radiosonde Launches



13 June 2014

14 June 2014

18 21 00 03 06 09 12 15 18 UTC

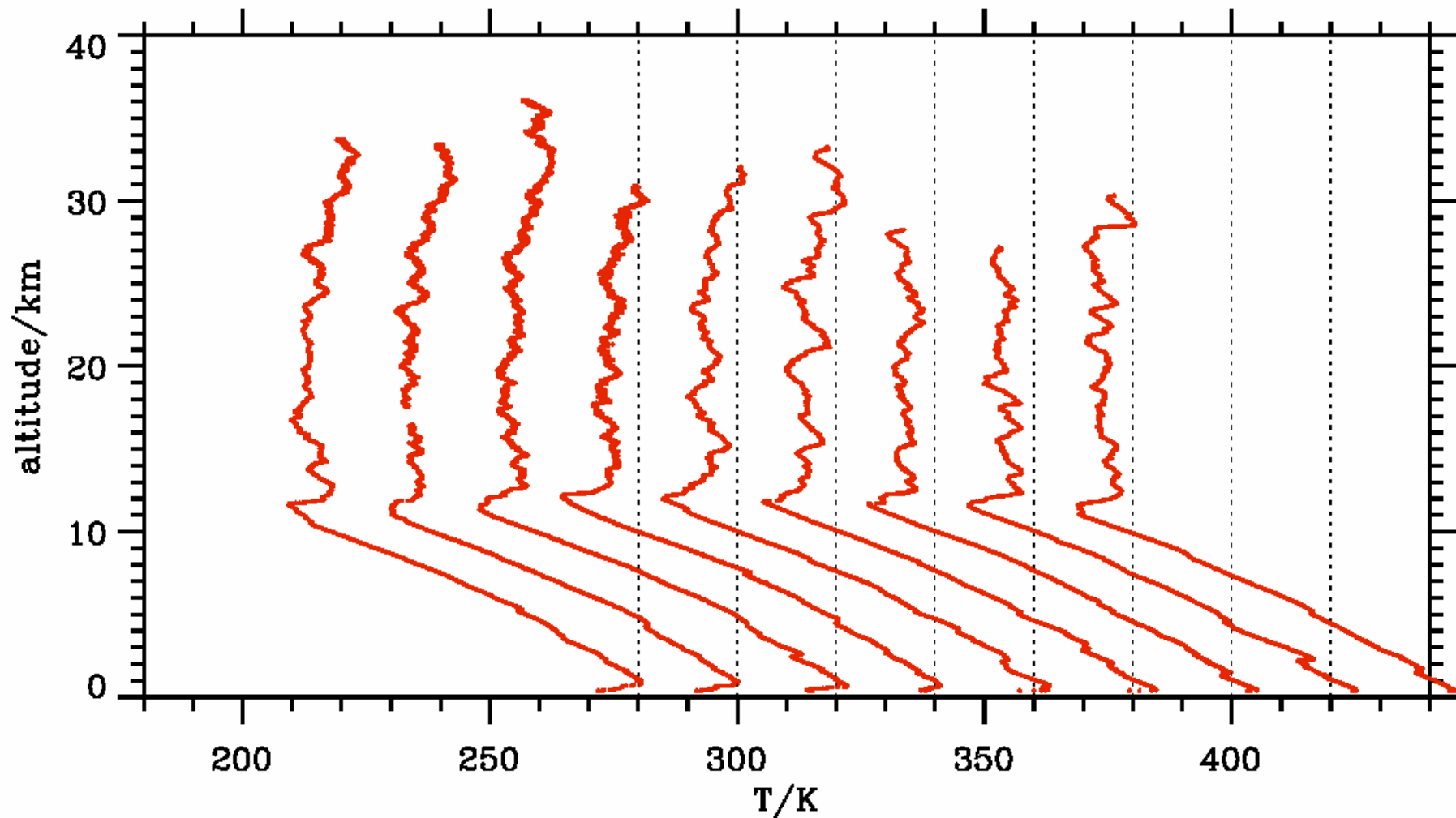


Wind direction

13 June 2014

14 June 2014

18 21 00 03 06 09 12 15 18 UTC

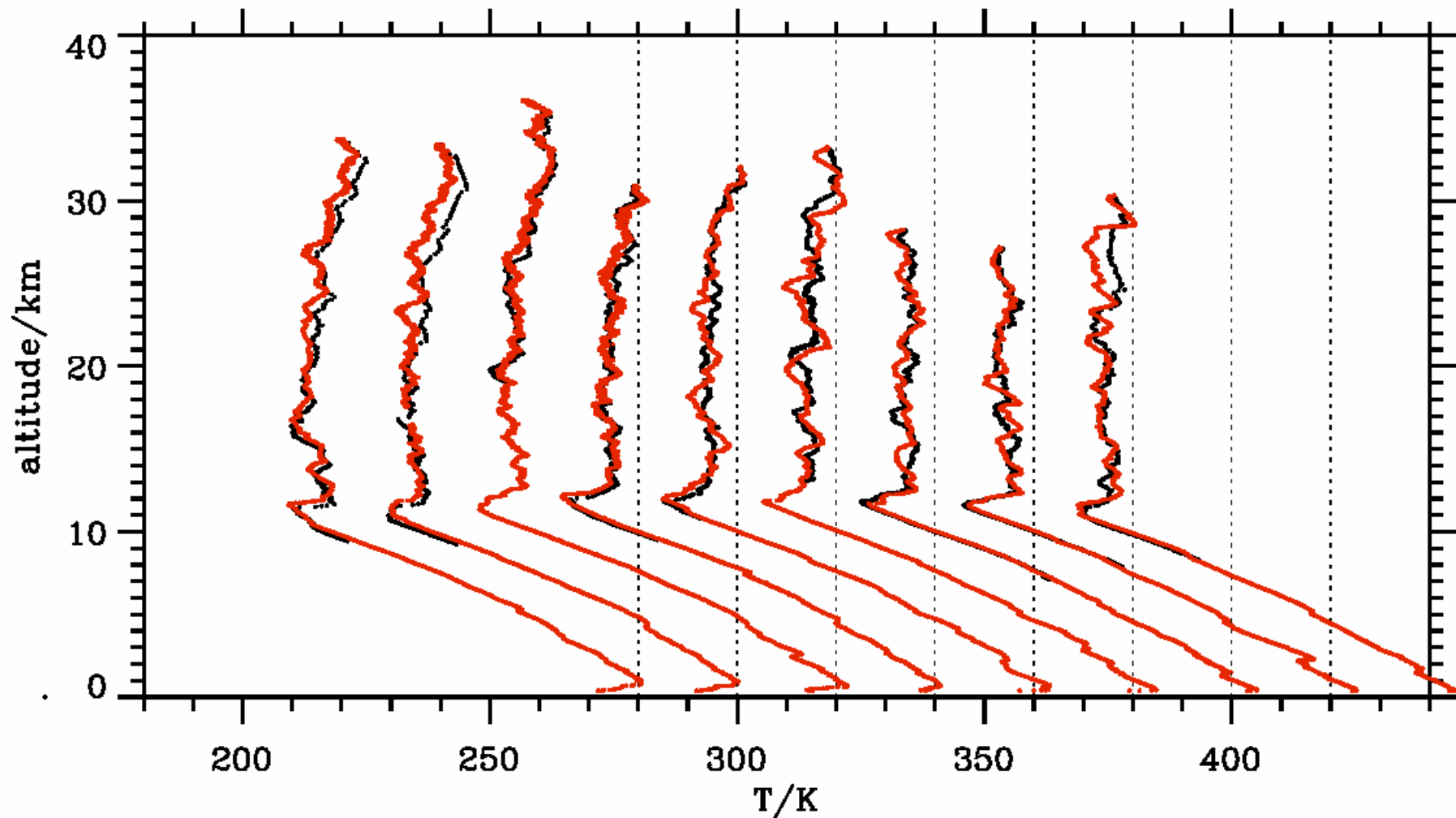


Absolute Temperature (K)

13 June 2014

14 June 2014

18 21 00 03 06 09 12 15 18 UTC

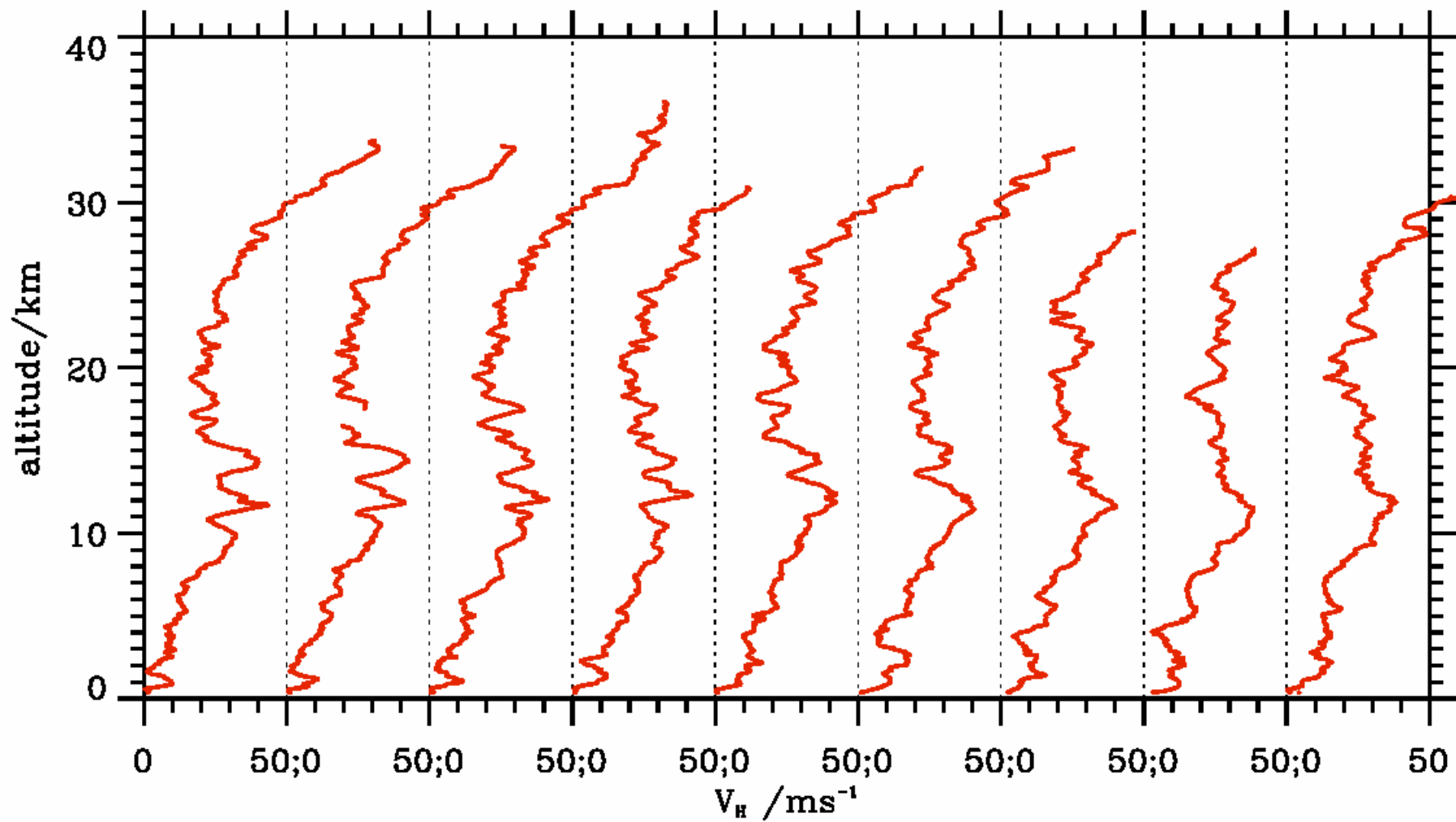


Absolute Temperature (K)

13 June 2014

14 June 2014

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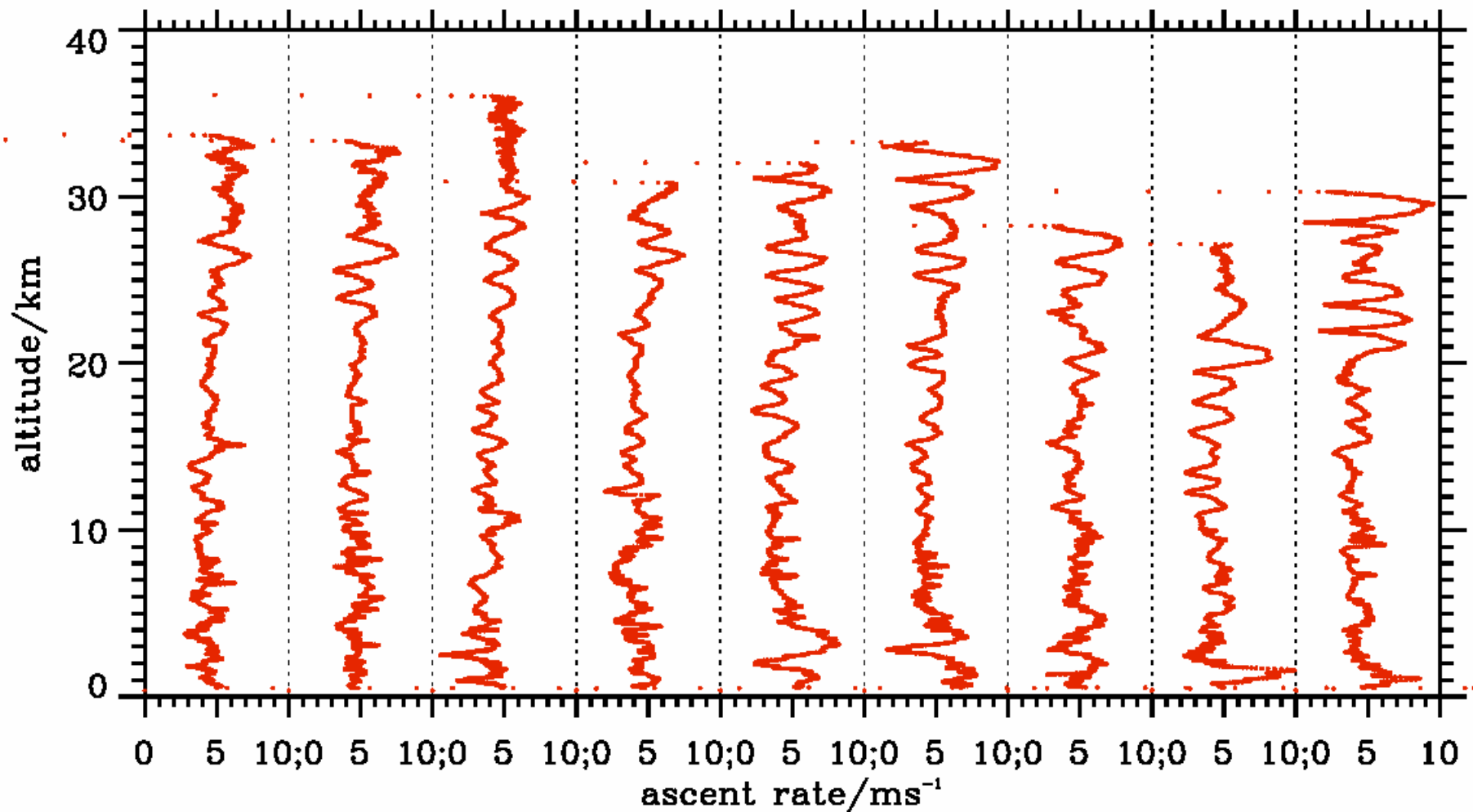


Horizontal Wind (m/s)

13 June 2014

14 June 2014

18 21 00 03 06 09 12 15 18 UTC



Ascent Rate (m/s)

IOP 3: Radiosonde Rotary Spectra

FFT power spectra of $u' + iv'$

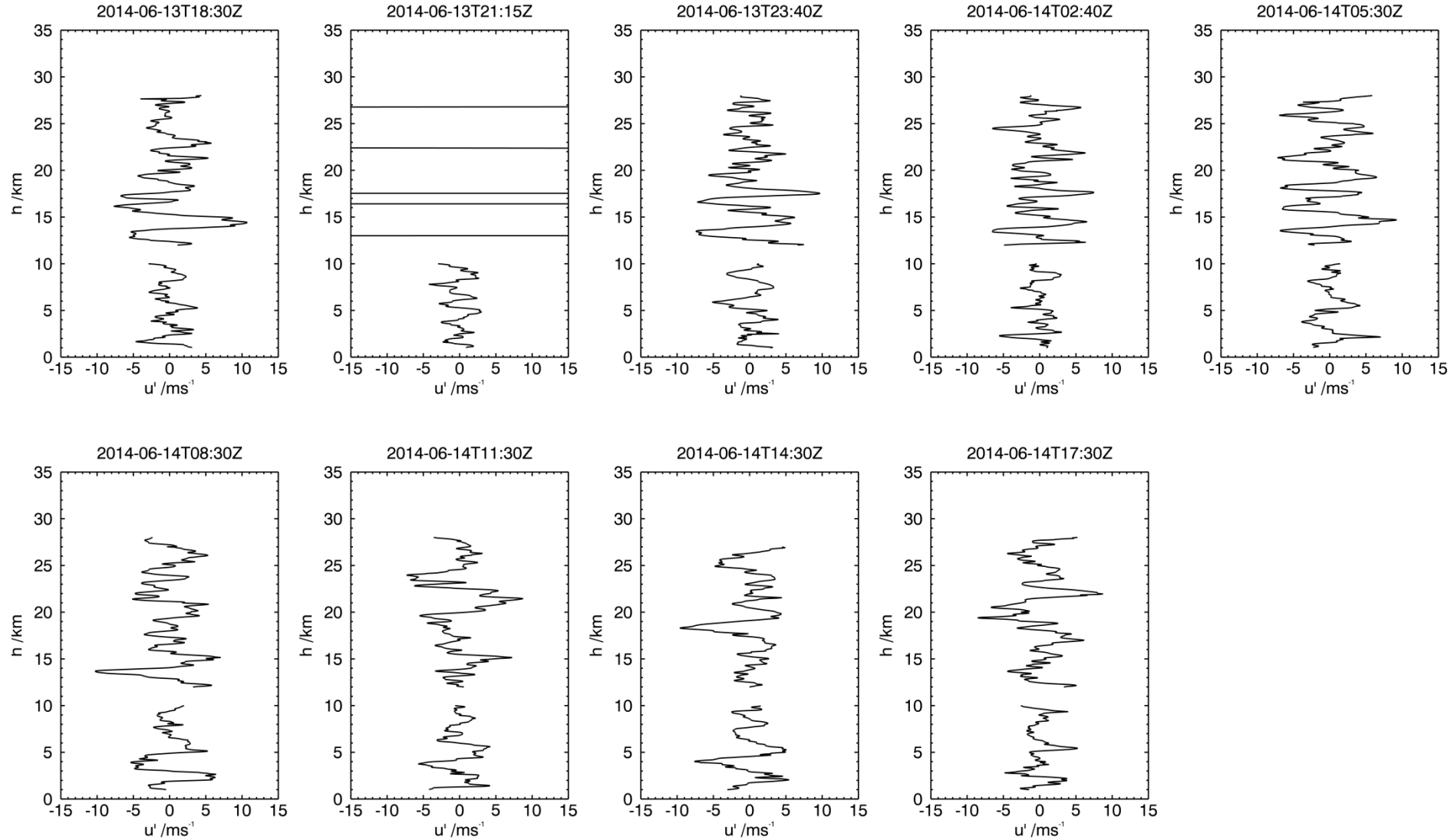
dashed: anticlockwise rotation/downward energy propagation
solid : clockwise rotation/upward energy propagation

Troposphere: 1 – 10 km altitude range

Stratosphere: 12 – 27 km altitude range

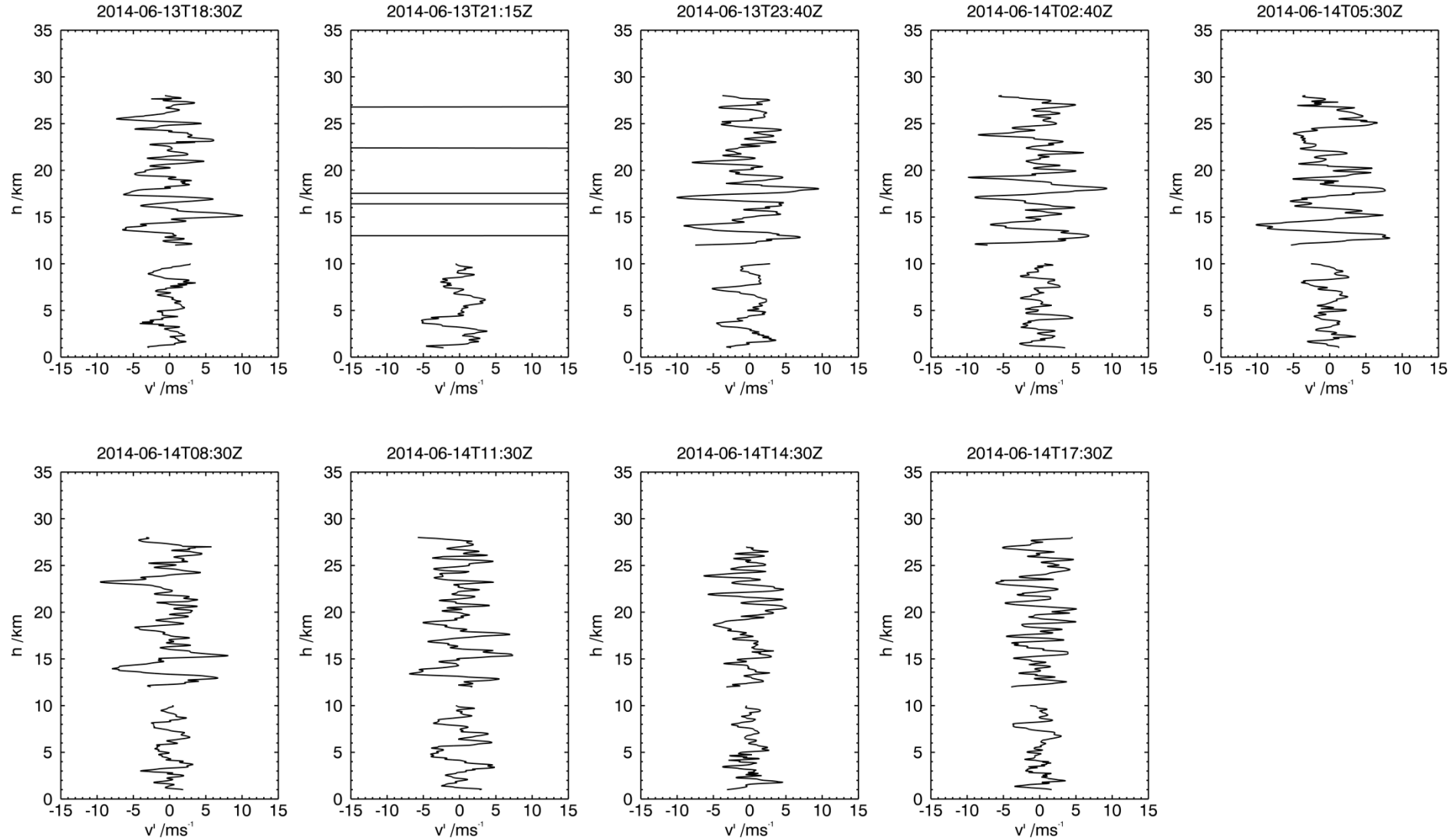
4th order polynomial fit for background profiles of u and v

IOP 3: Radiosonde Rotary Spectra



u - perturbations

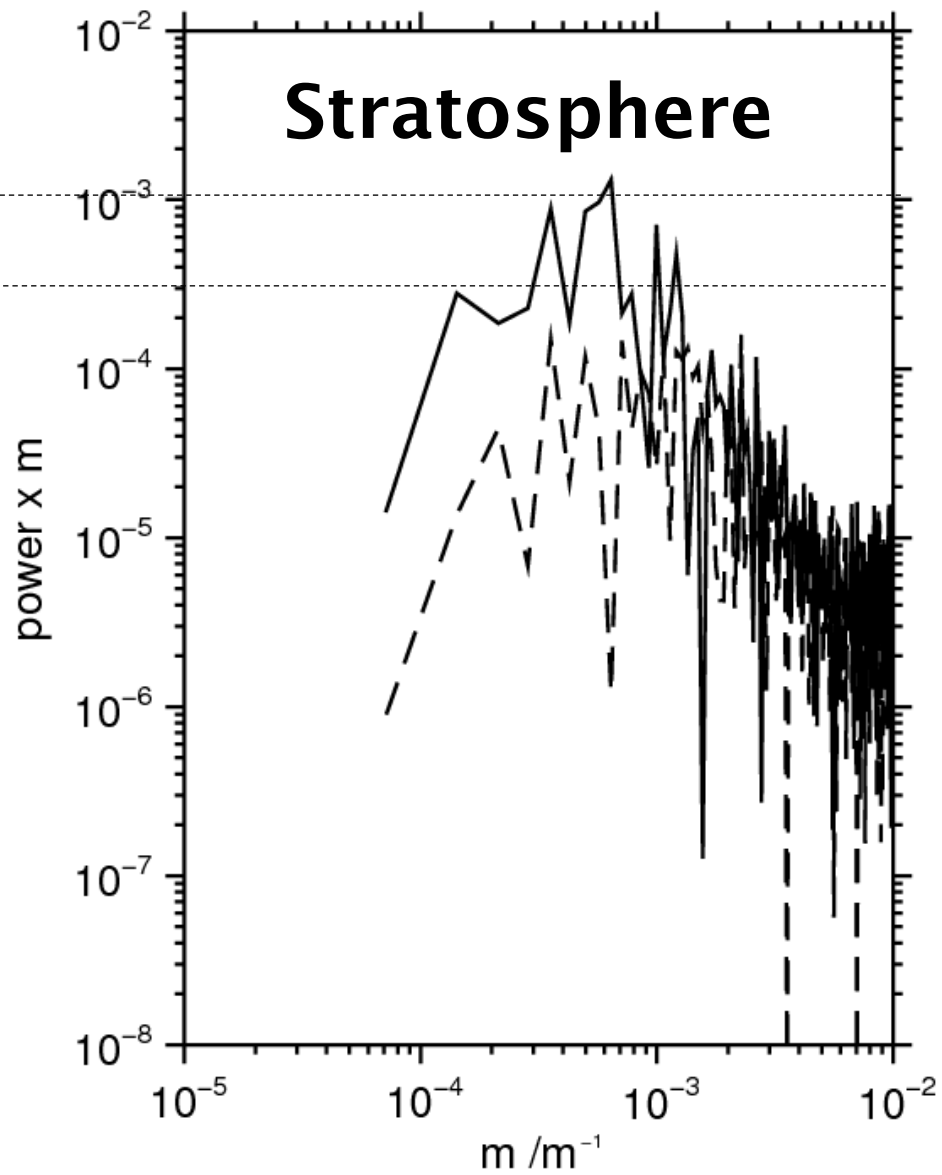
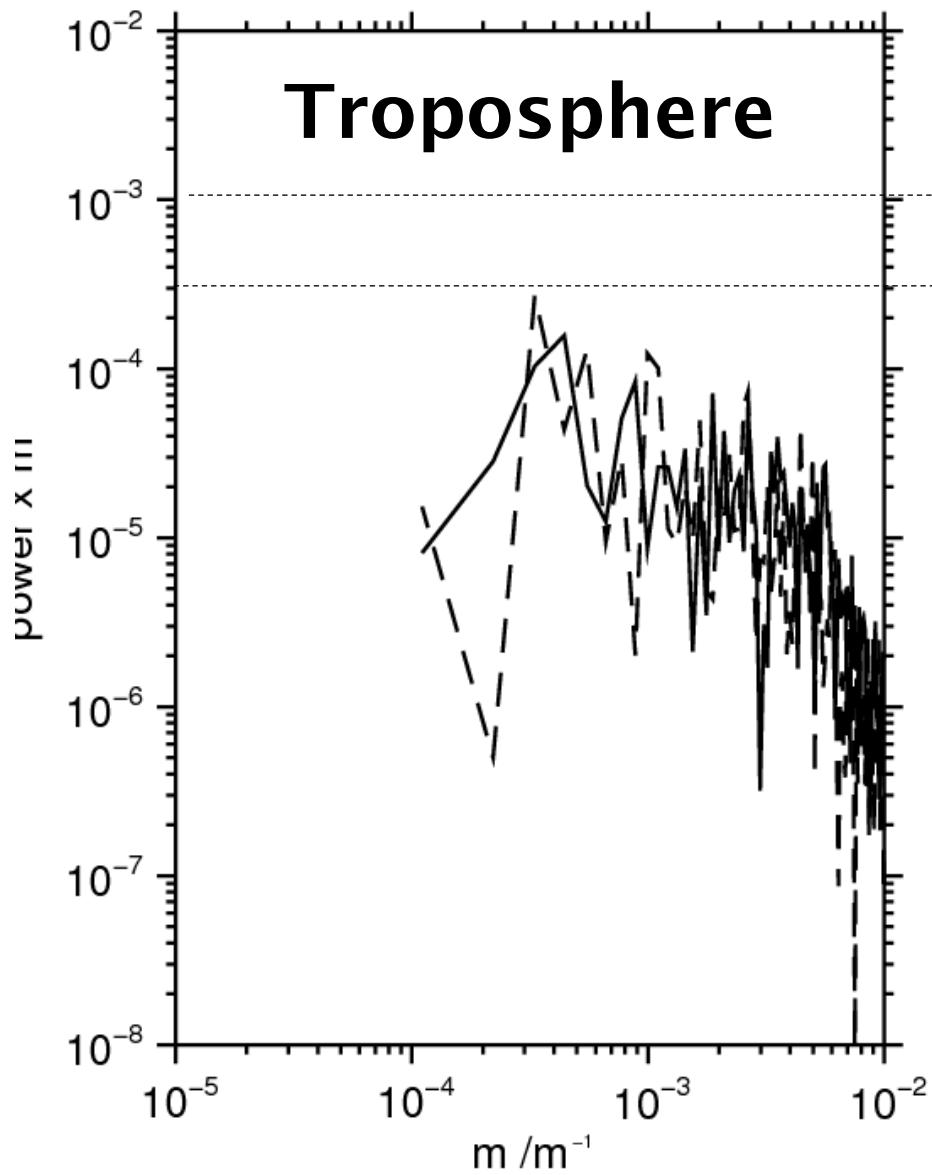
IOP 3: Radiosonde Rotary Spectra



v - perturbations

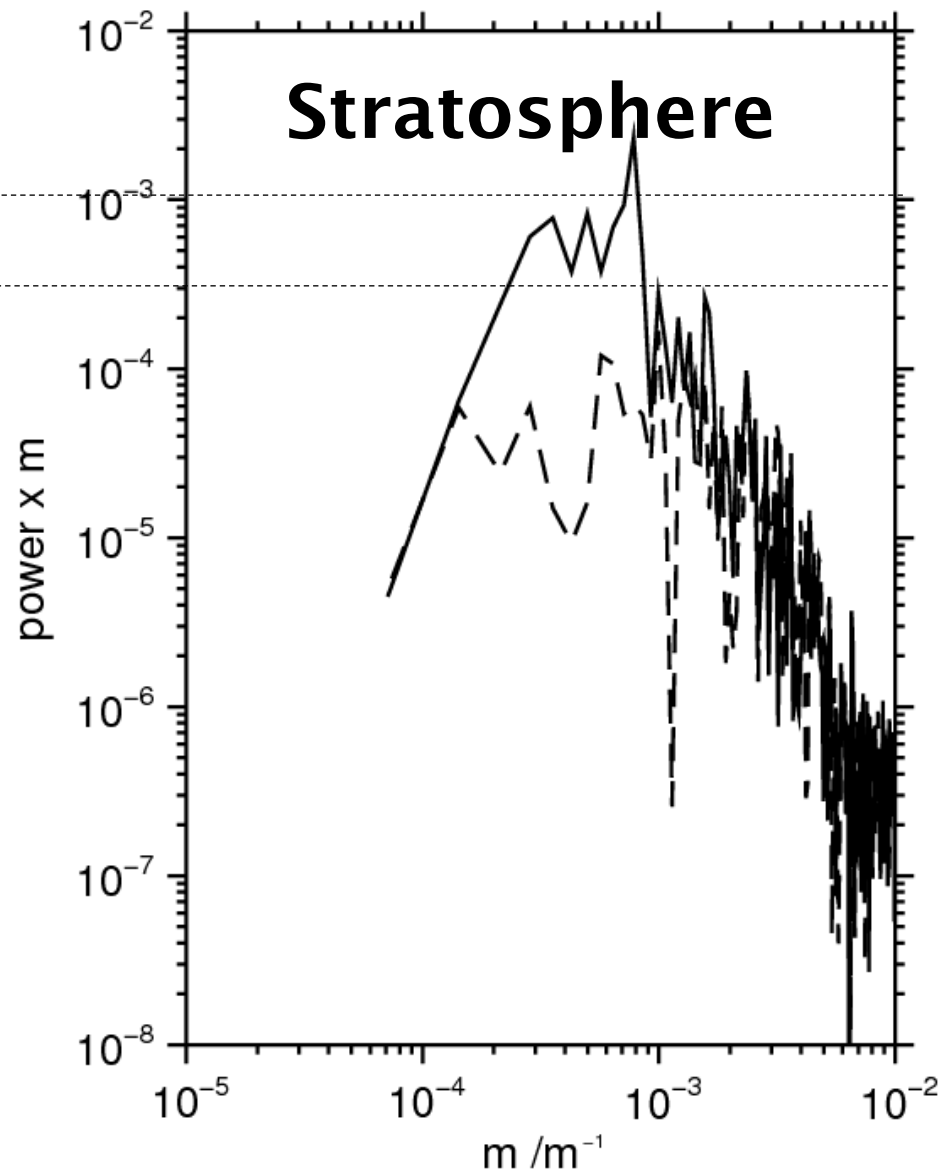
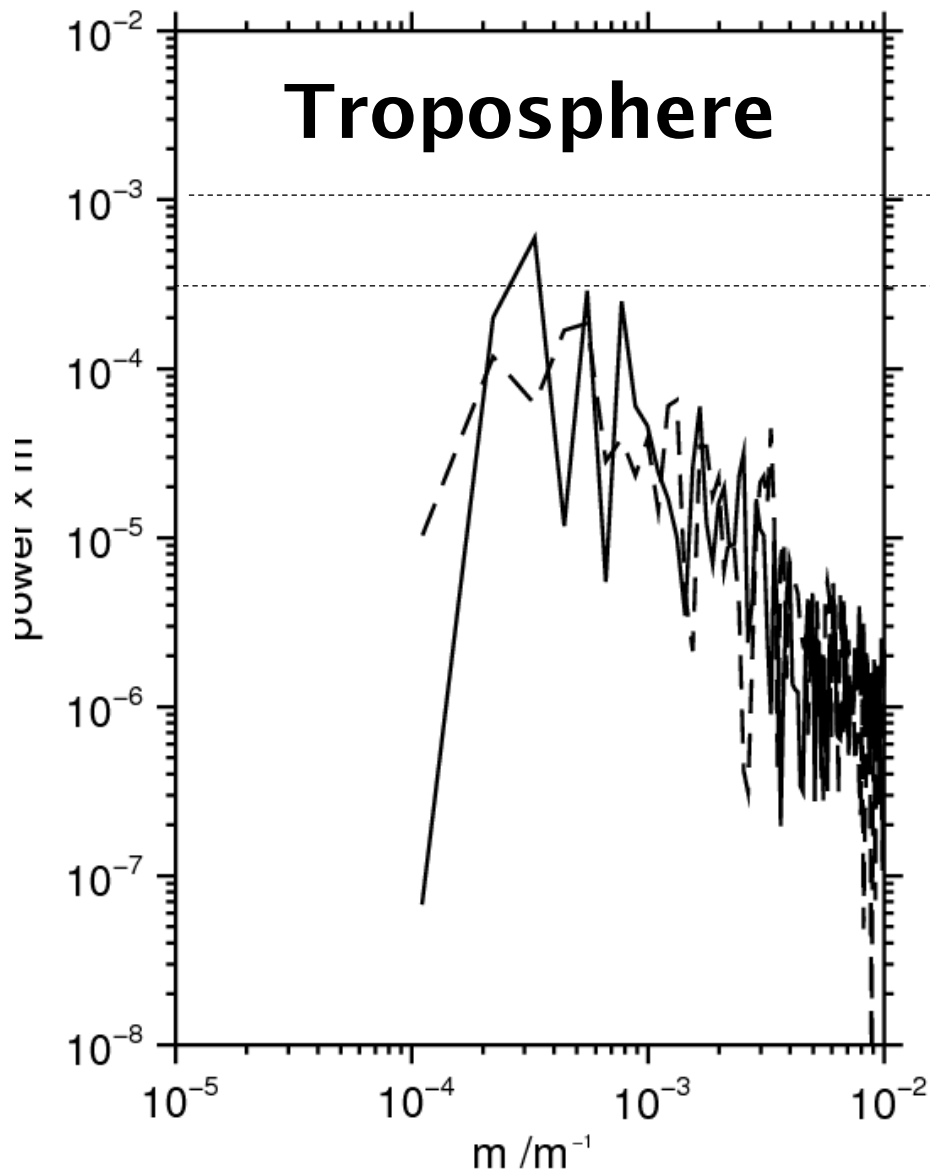
13 June 2014 18 UTC

z



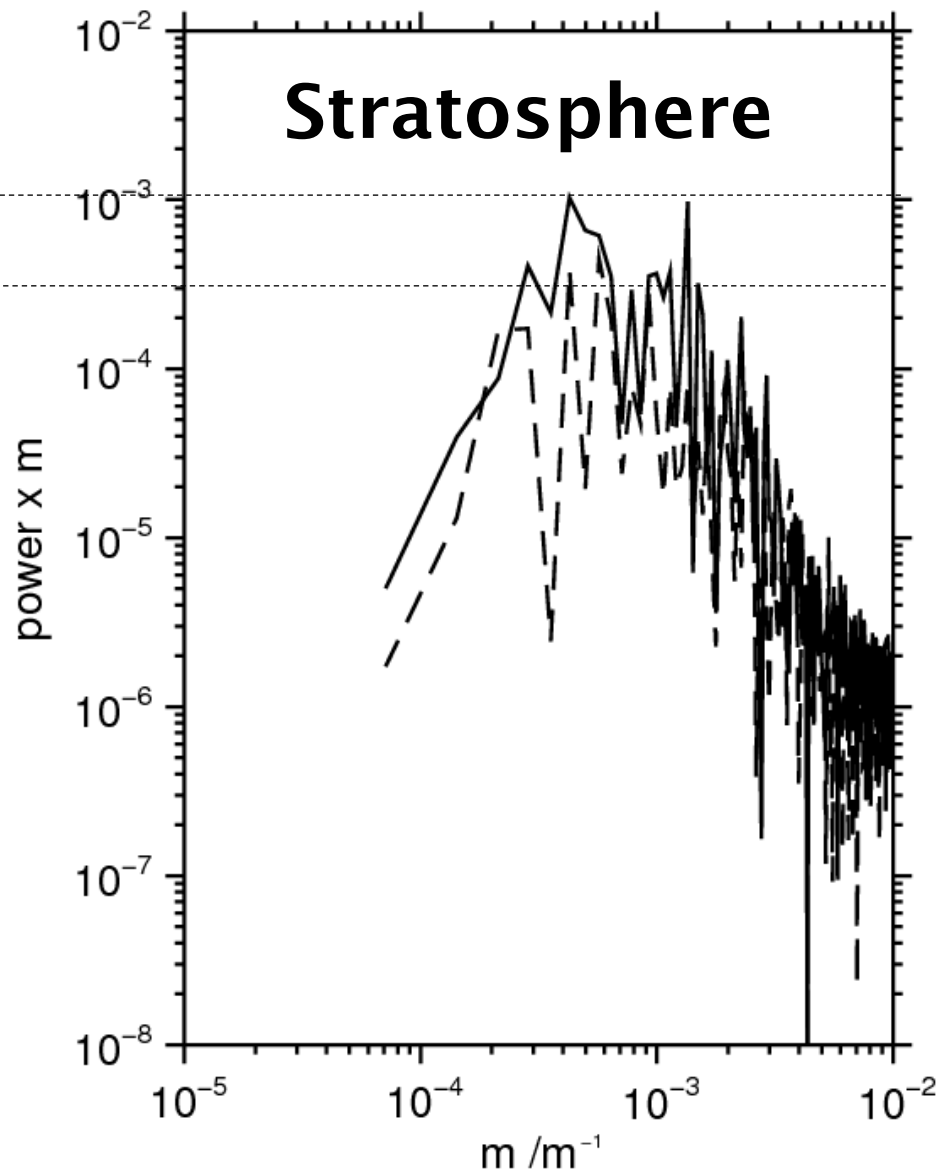
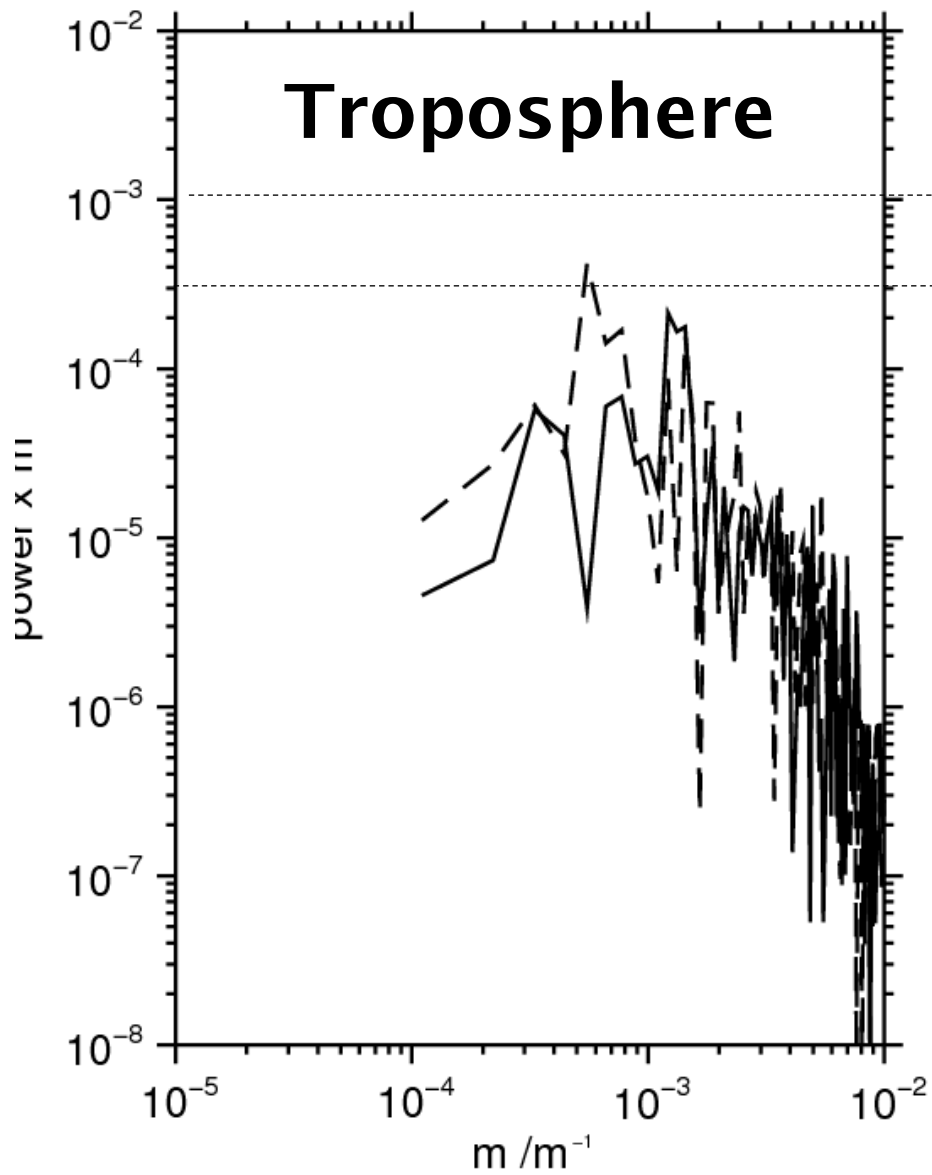
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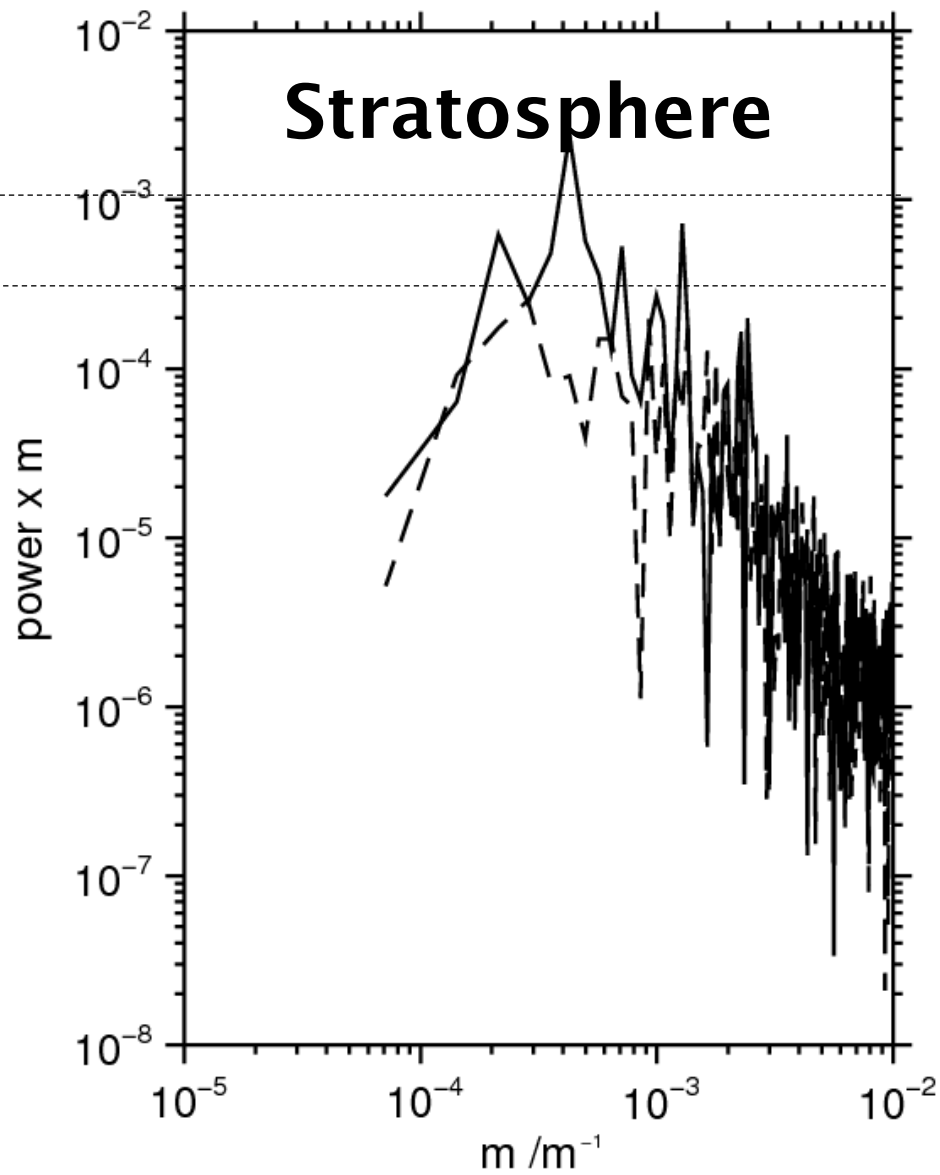
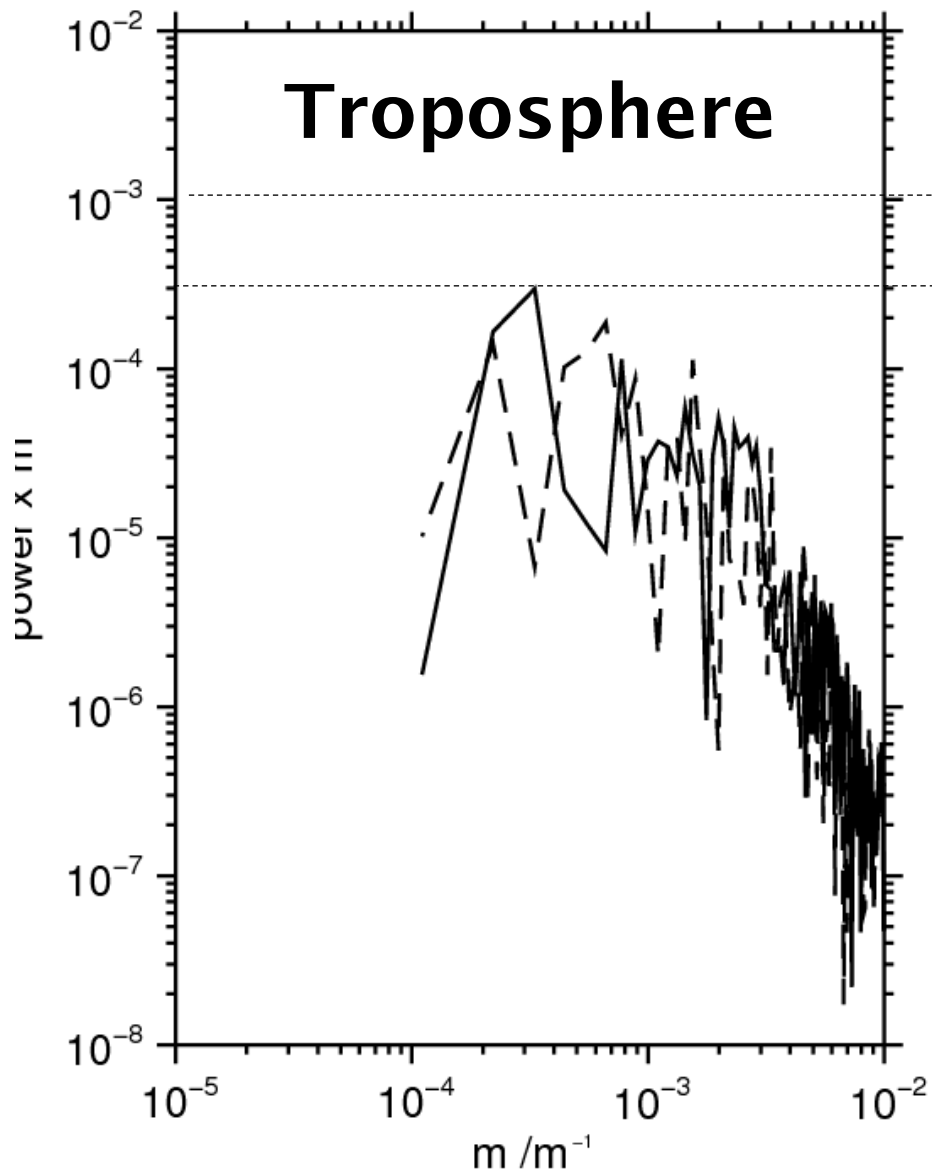
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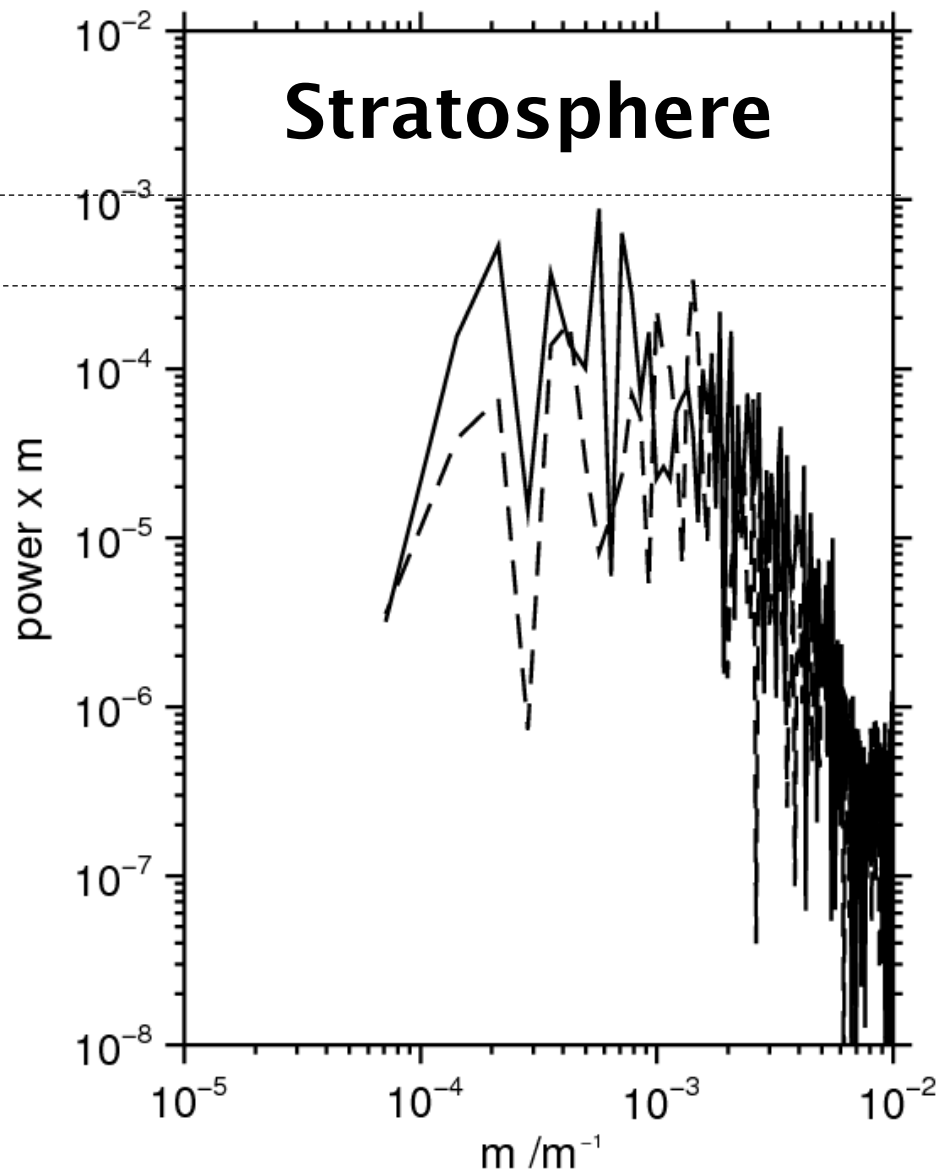
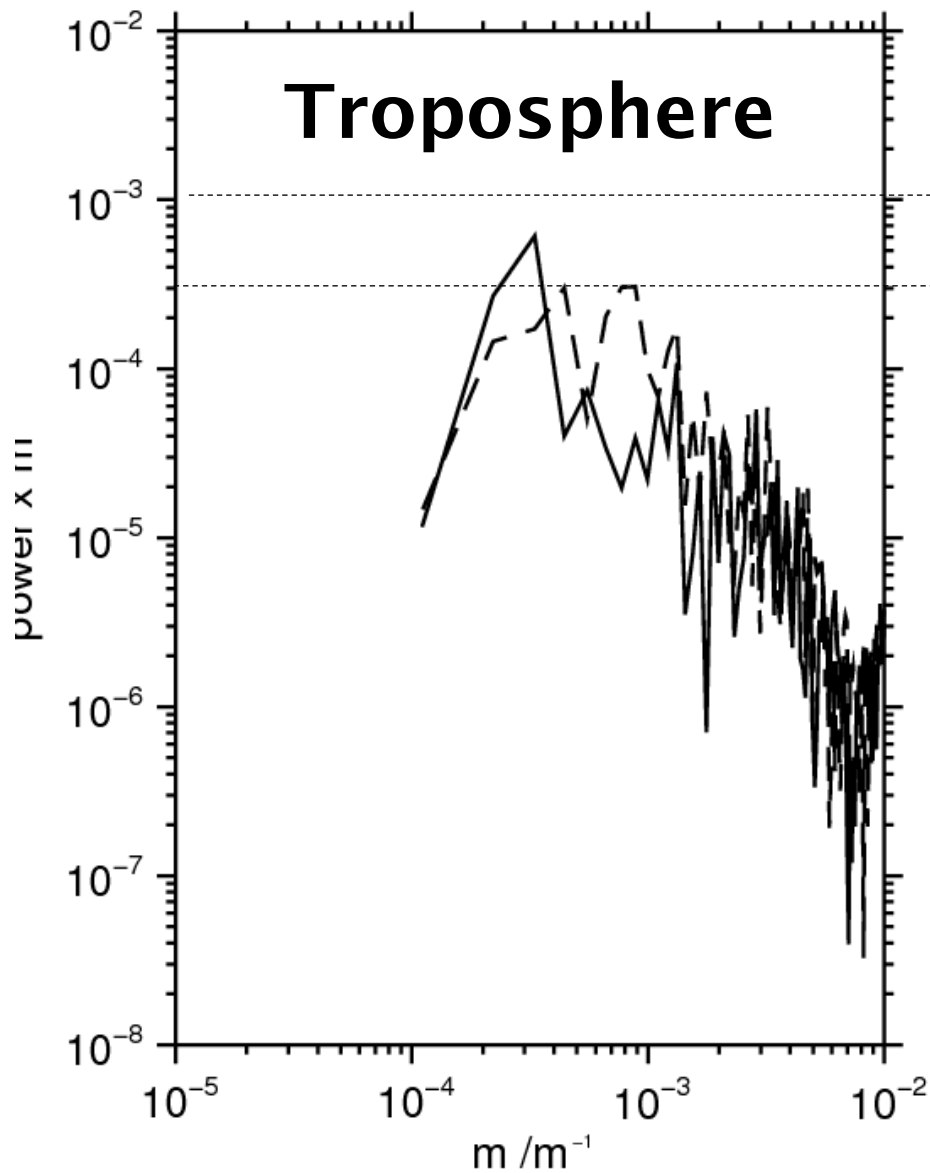
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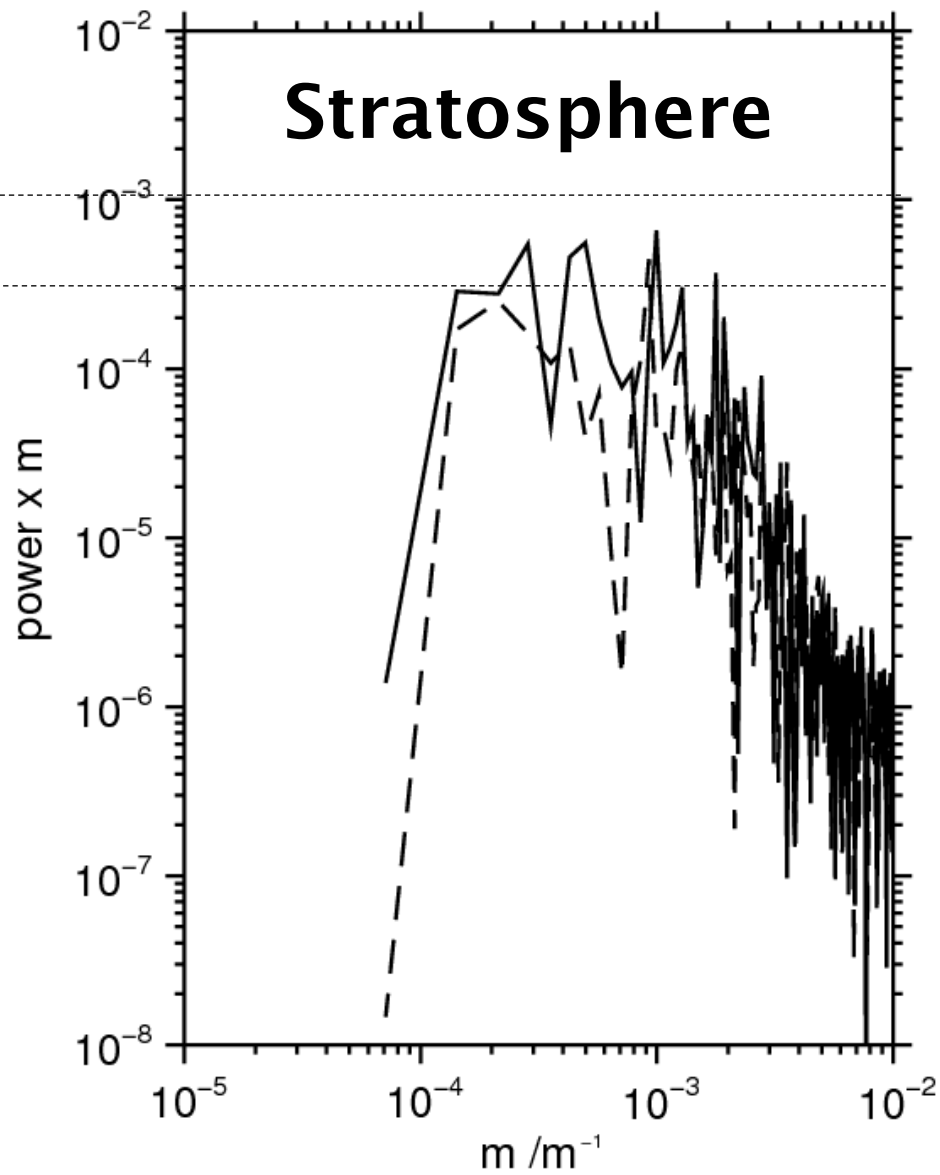
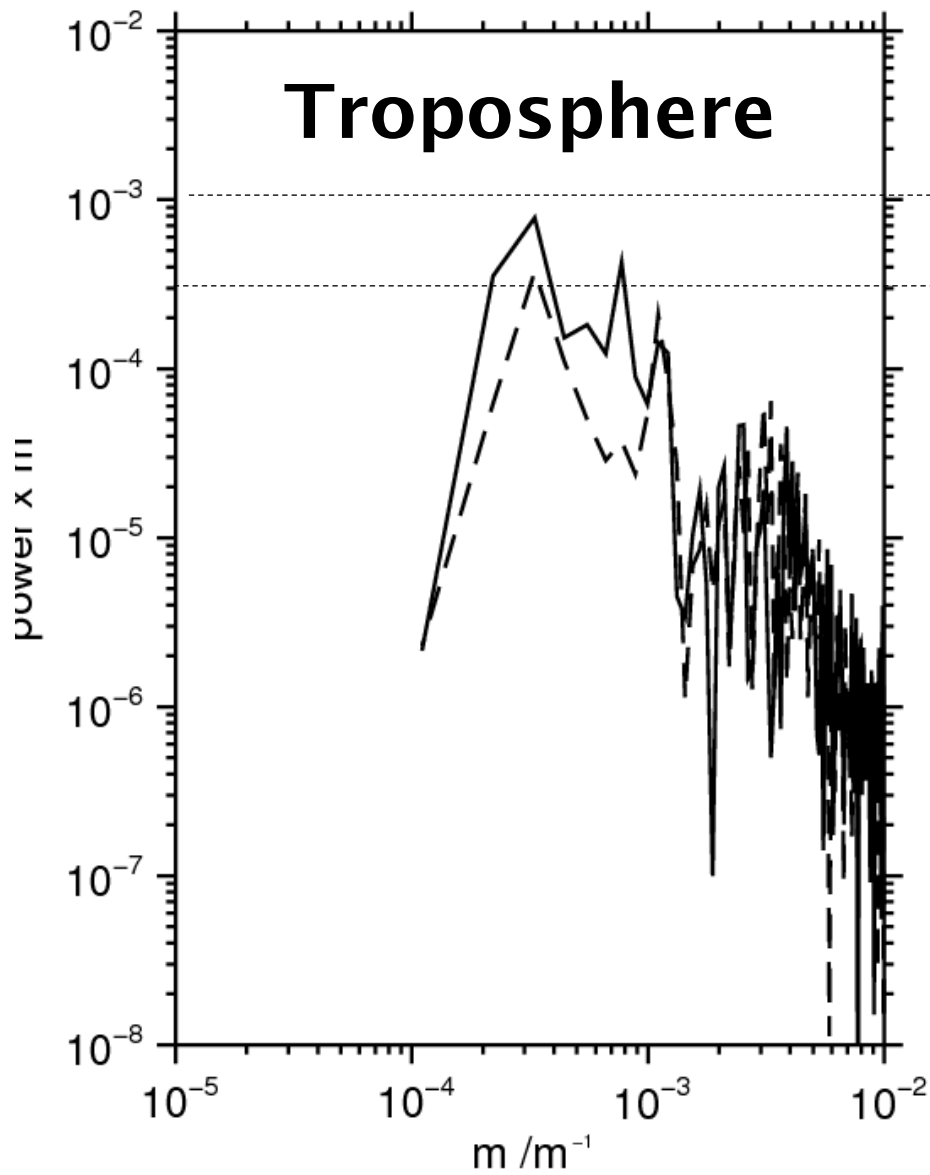
14 June 2014 09 UTC

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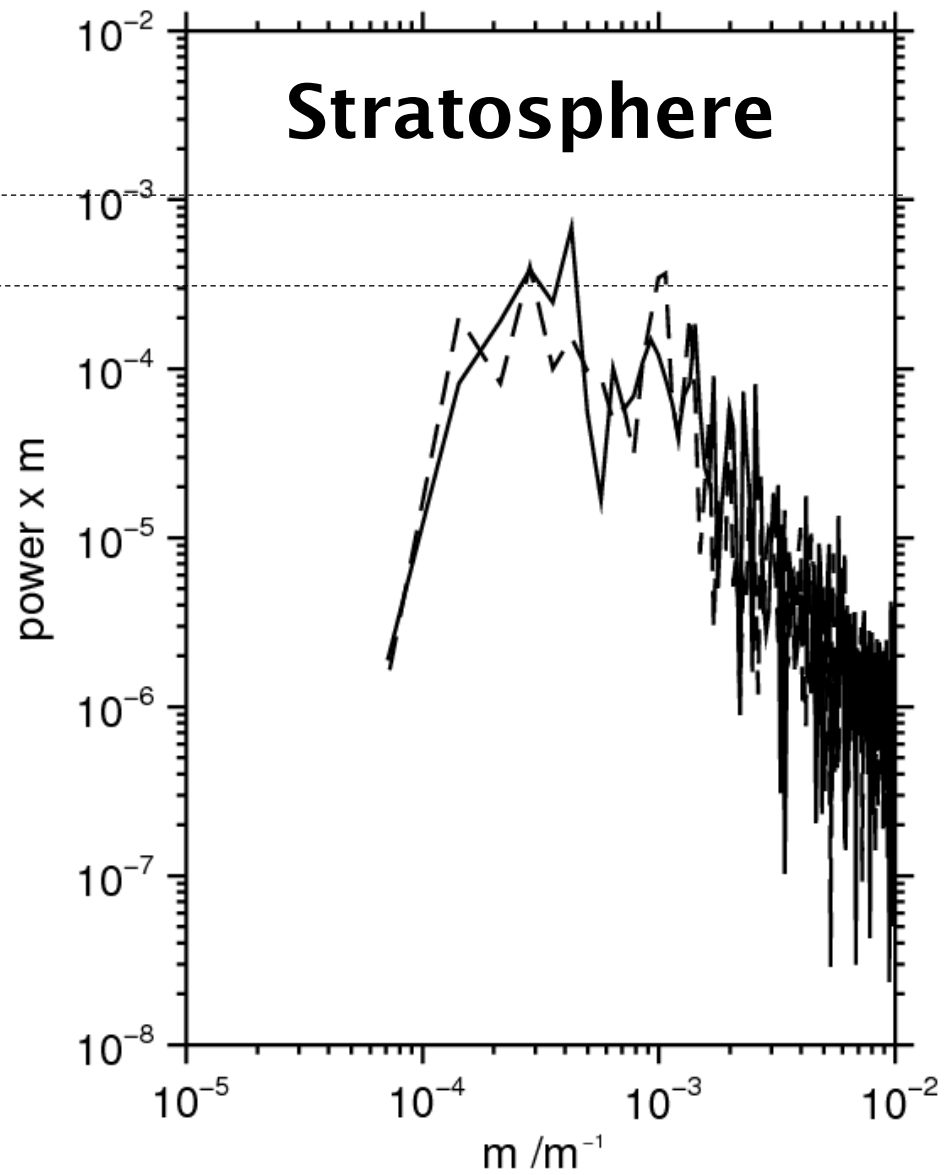
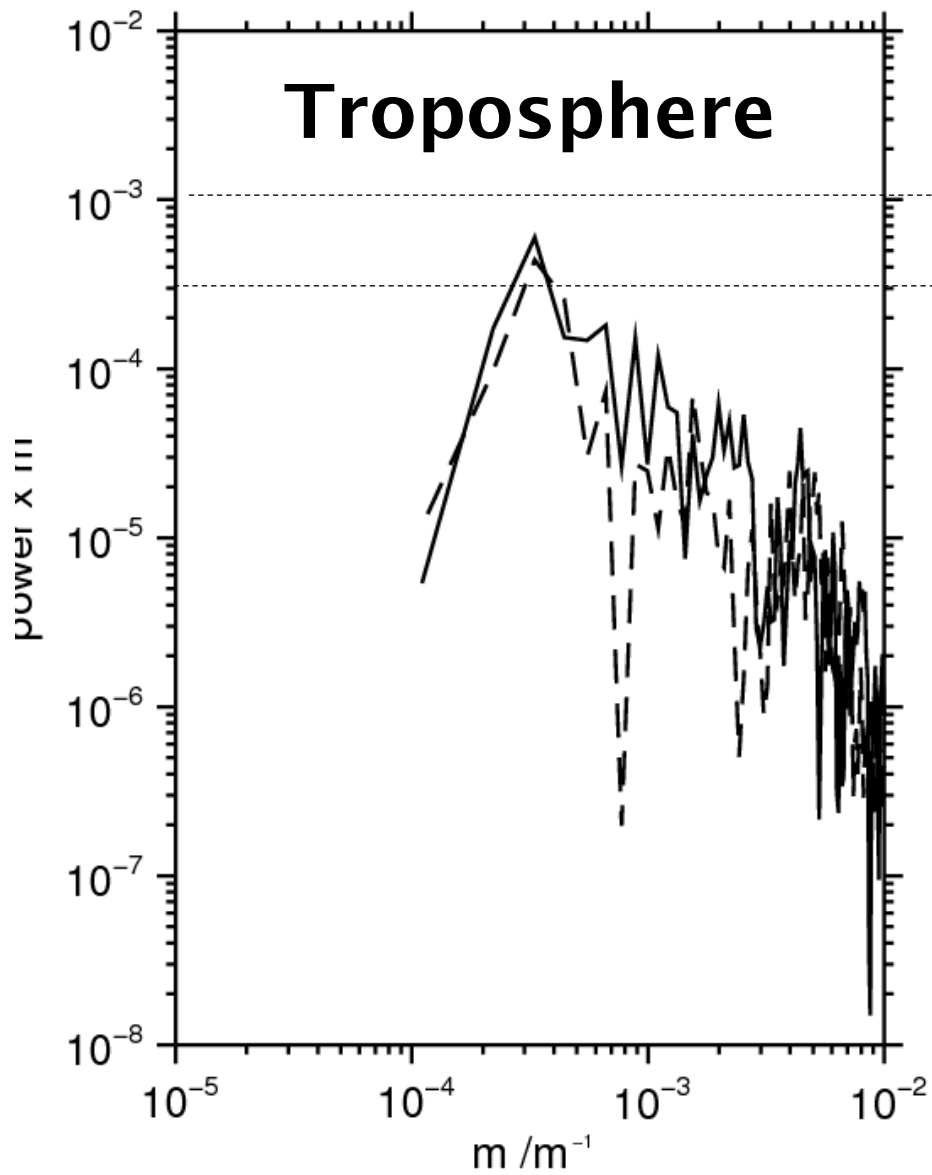
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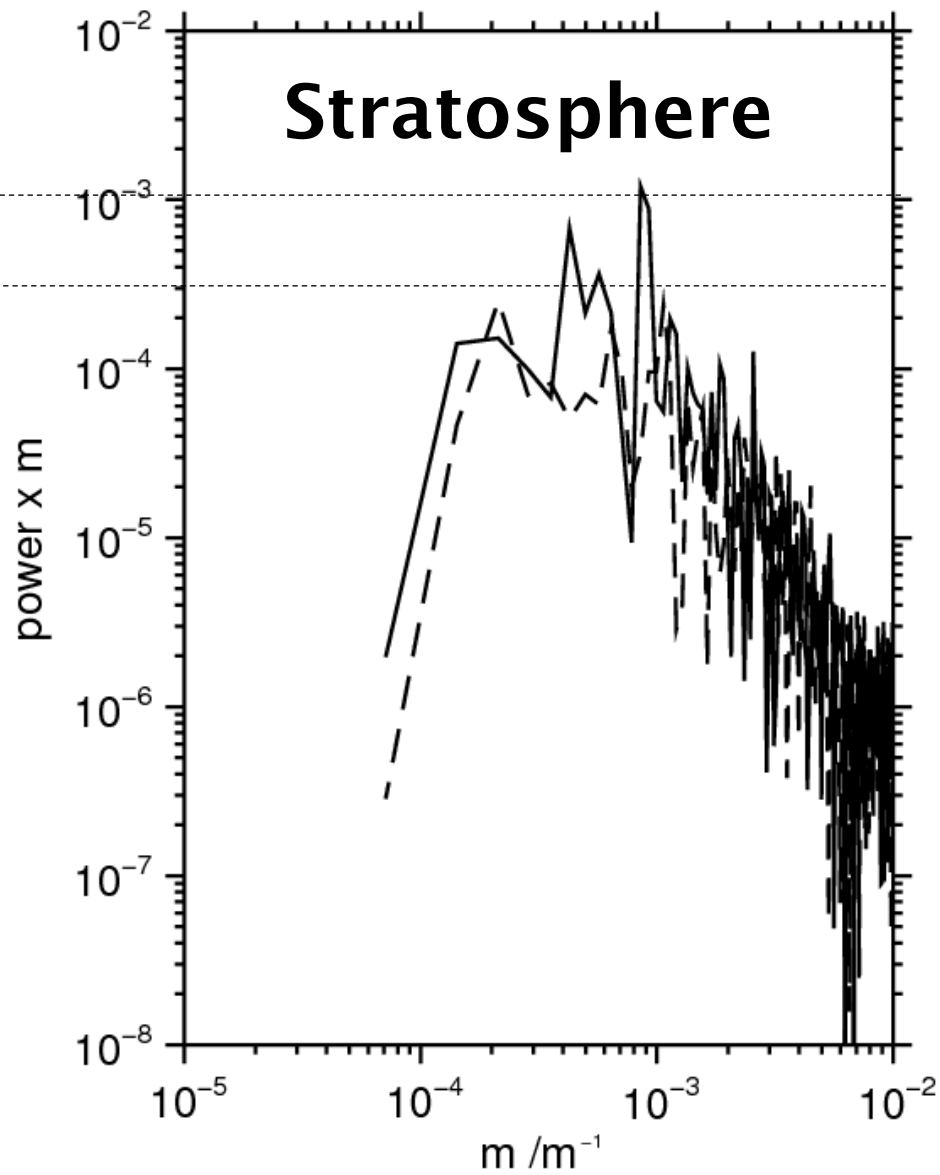
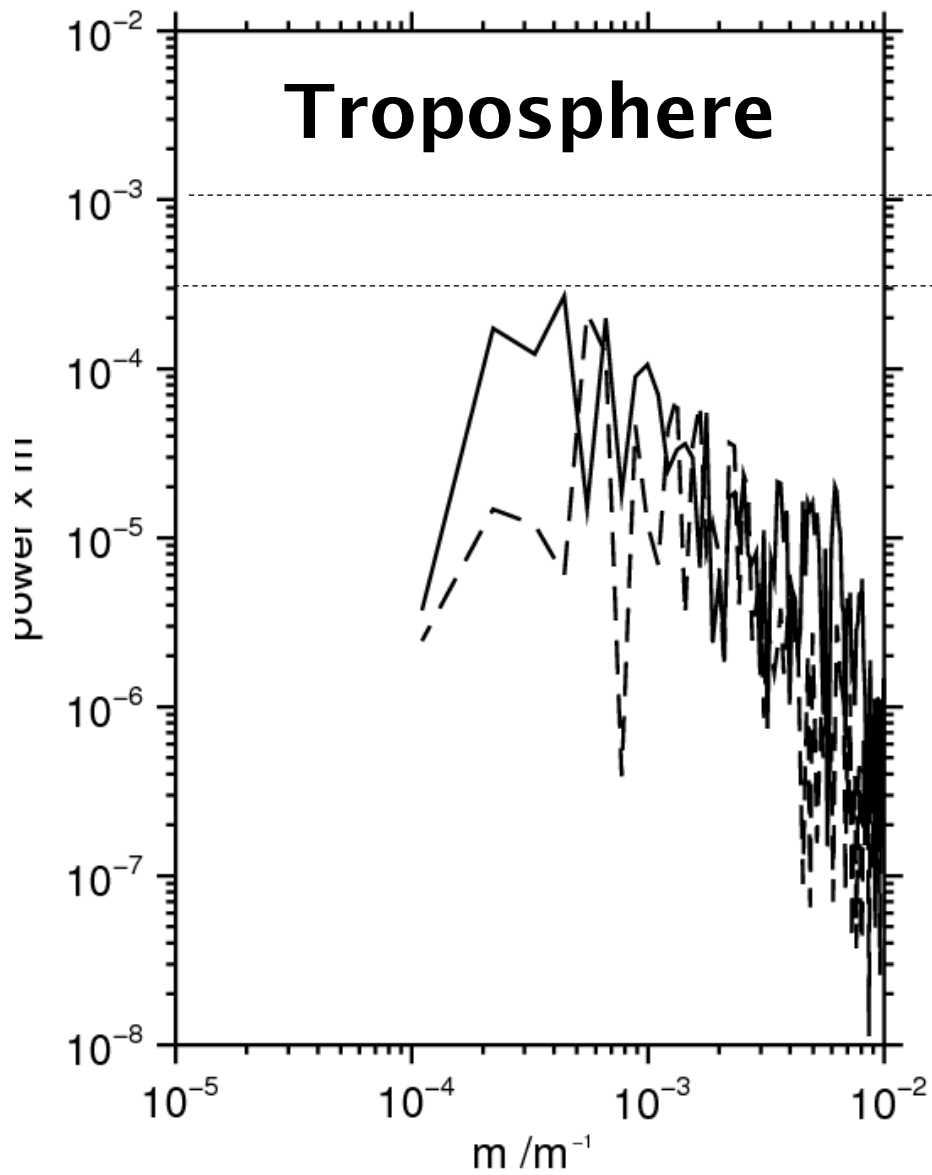
14 June 2014 15 UTC

z



14 June 2014 18 UTC

z





Rayleigh Lidar Beam at Lauder
19 June 2014 Markus Garhammer