

## Description of ESRL images:

Note: "fXX" refers to forecast time XX (e.g. f12 = 12 hour forecast)

Units are given in the image titles.

3hap\_sfc\_fXX.jpg : 3-hour accumulated precip with mean sea level pressure

(Prelude to all Nau, Nhu plots) Orographic gravity wave theory prescribes the atmosphere's response as a function of two variables:  $N\alpha/U$  and  $Nh/U$  (where  $N$  is Brunt-Vaisala frequency,  $\alpha$  is mountain width,  $h$  is mountain height, and  $U$  is the horizontal wind vector tangential to the plane of the cross section) such that the atmosphere becomes nonhydrostatic when  $N\alpha/U > 10$ , and nonlinear when  $Nh/U > 1$ . There are two plots each for the  $\alpha$  and  $h$  parameters which depend on whether large or small scale values are used. Small scale values for  $\alpha$  and  $h$  were determined by averaging the small scale features of mountain widths and heights, respectively.

Nau\_ls\_sca\_fXX.jpg : Large scale  $N\alpha/U$  for cross section A

Nau\_ls\_scb\_fXX.jpg : Large scale  $N\alpha/U$  for cross section B

Nau\_ls\_scc\_fXX.jpg : Large scale  $N\alpha/U$  for cross section C

Nau\_ss\_sca\_fXX.jpg : Small scale  $N\alpha/U$  for cross section A

Nau\_ss\_scb\_fXX.jpg : Small scale  $N\alpha/U$  for cross section B

Nau\_ss\_scc\_fXX.jpg : Small scale  $N\alpha/U$  for cross section C

Nhu\_ls\_sca\_fXX.jpg : Large scale  $Nh/U$  for cross section A

Nhu\_ls\_scb\_fXX.jpg : Large scale  $Nh/U$  for cross section B

Nhu\_ls\_scc\_fXX.jpg : Large scale  $Nh/U$  for cross section C

Nhu\_ss\_sca\_fXX.jpg : Small scale  $Nh/U$  for cross section A

Nhu\_ss\_scb\_fXX.jpg : Small scale  $Nh/U$  for cross section B

Nhu\_ss\_scc\_fXX.jpg : Small scale  $Nh/U$  for cross section C

dewp\_200\_fXX.jpg : Dewpoint at 200 mb

dewp\_250\_fXX.jpg : Dewpoint at 250 mb

dewp\_500\_fXX.jpg : Dewpoint at 500 mb

dewp\_700\_fXX.jpg : Dewpoint at 700 mb

dewp\_850\_fXX.jpg : Dewpoint at 850 mb

mslp\_sfc\_fXX.jpg : Mean sea level pressure

omeg\_04K\_fXX : Omega at 4 km

omeg\_06K\_fXX : Omega at 6 km

omeg\_08K\_fXX : Omega at 8 km

omeg\_10K\_fXX : Omega at 10 km

omeg\_12K\_fXX : Omega at 12 km  
omeg\_14K\_fXX : Omega at 14 km

omeg\_sca\_fXX : Omega for cross section A  
omeg\_scb\_fXX : Omega for cross section B  
omeg\_scc\_fXX : Omega for cross section C

relh\_04K\_fXX : Relative humidity at 4 km  
relh\_06K\_fXX : Relative humidity at 6 km  
relh\_08K\_fXX : Relative humidity at 8 km  
relh\_10K\_fXX : Relative humidity at 10 km  
relh\_12K\_fXX : Relative humidity at 12 km  
relh\_14K\_fXX : Relative humidity at 14 km

relh\_200\_fXX : Relative humidity at 200 mb  
relh\_250\_fXX : Relative humidity at 250 mb  
relh\_500\_fXX : Relative humidity at 500 mb  
relh\_700\_fXX : Relative humidity at 700 mb  
relh\_850\_fXX : Relative humidity at 850 mb

rich\_sca\_fXX : Richardson number for cross section A  
rich\_scb\_fXX : Richardson number for cross section B  
rich\_scc\_fXX : Richardson number for cross section C

scor\_sca\_fXX : Scorer parameter for cross section A  
scor\_scb\_fXX : Scorer parameter for cross section B  
scor\_scc\_fXX : Scorer parameter for cross section C

sndg\_DRA\_fXX : Sounding at Desert Rock, NV  
sndg\_EDW\_fXX : Sounding at Edwards AFB, CA

thta\_04K\_fXX : Potential temperature at 4 km  
thta\_06K\_fXX : Potential temperature at 6 km  
thta\_08K\_fXX : Potential temperature at 8 km  
thta\_10K\_fXX : Potential temperature at 10 km  
thta\_12K\_fXX : Potential temperature at 12 km  
thta\_14K\_fXX : Potential temperature at 14 km

thta\_200\_fXX : Potential temperature at 200 mb  
thta\_250\_fXX : Potential temperature at 250 mb  
thta\_500\_fXX : Potential temperature at 500 mb  
thta\_700\_fXX : Potential temperature at 700 mb  
thta\_850\_fXX : Potential temperature at 850 mb

totp\_sfc\_fXX : Total precipitation for the forecast period

trht\_sfc\_fXX : Terrain height (with lines denoting cross section locations)

(Note: Turbulent Kinetic Energy plots are available for the NMM only.)

trke\_sca\_fXX : Turbulent Kinetic Energy for cross section A

trke\_scb\_fXX : Turbulent Kinetic Energy for cross section B

trke\_scc\_fXX : Turbulent Kinetic Energy for cross section C

vvel\_500\_fXX : Vertical velocity at 500 mb

vvel\_700\_fXX : Vertical velocity at 700 mb

wind\_04K\_fXX : Wind at 4 km

wind\_06K\_fXX : Wind at 6 km

wind\_08K\_fXX : Wind at 8 km

wind\_10K\_fXX : Wind at 10 km

wind\_12K\_fXX : Wind at 12 km

wind\_14K\_fXX : Wind at 14 km

wind\_sca\_fXX : Wind speed for cross section A

wind\_scb\_fXX : Wind speed for cross section B

wind\_scc\_fXX : Wind speed for cross section C