Boundary Layer Cloud Turbulence Characteristics

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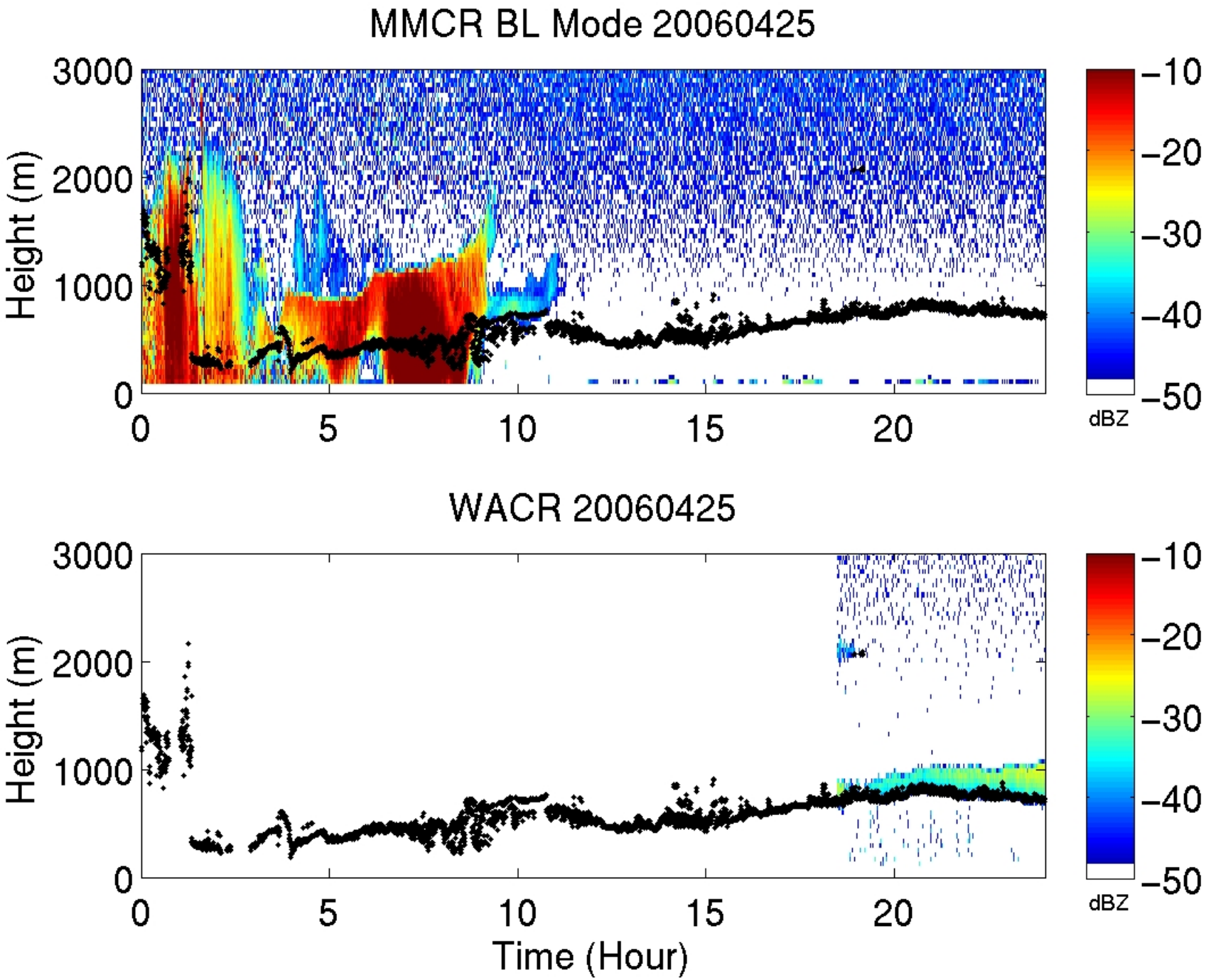
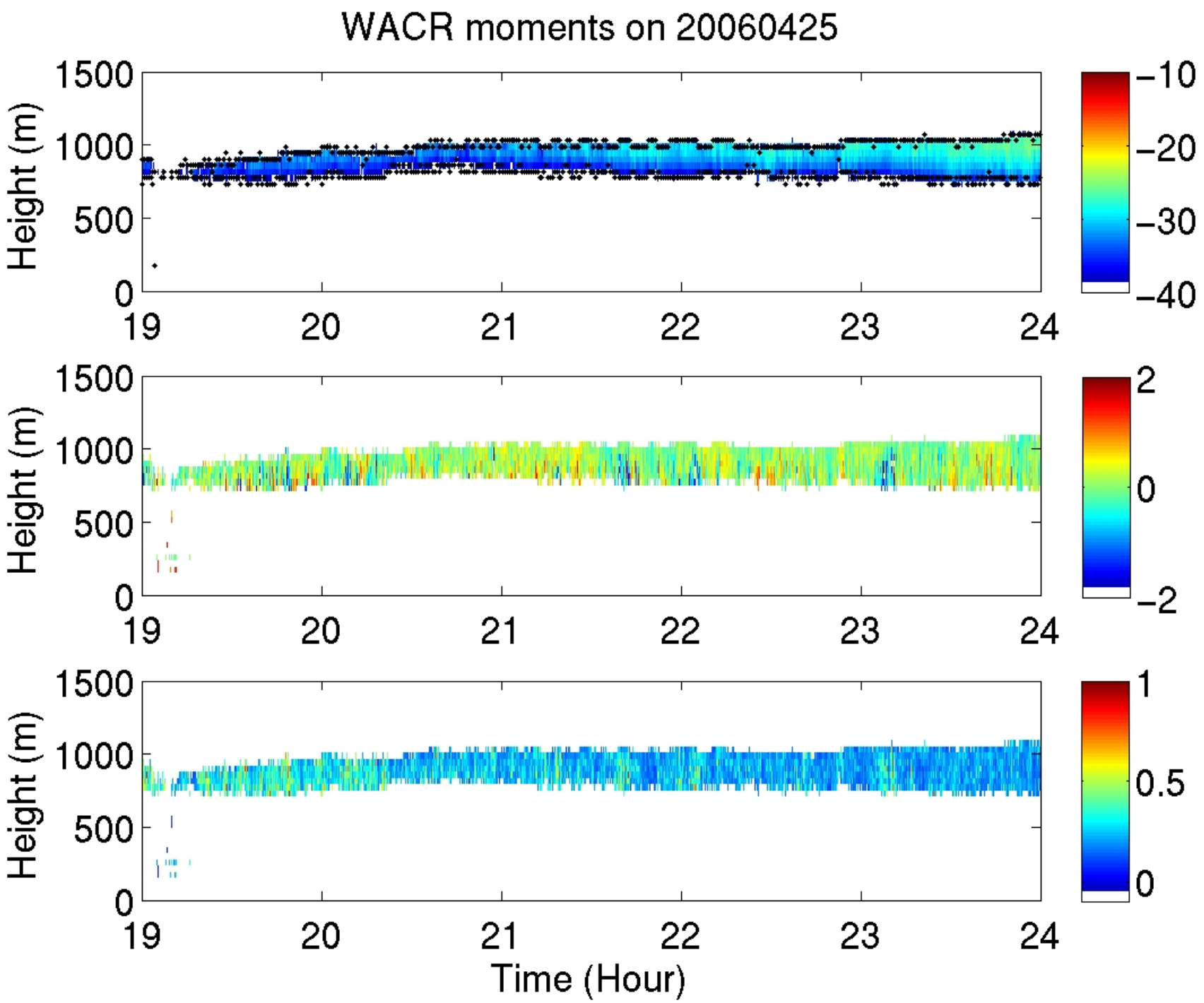
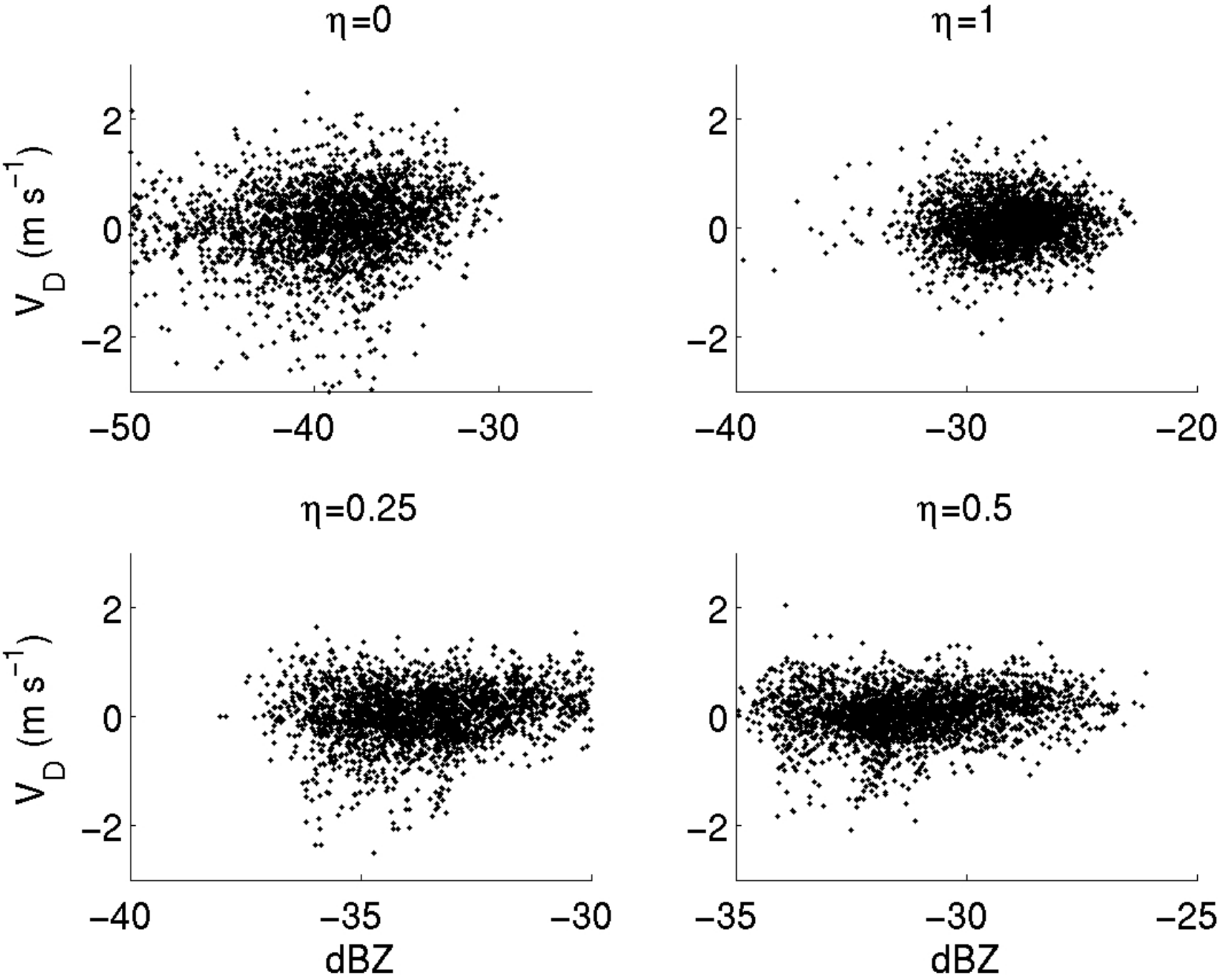
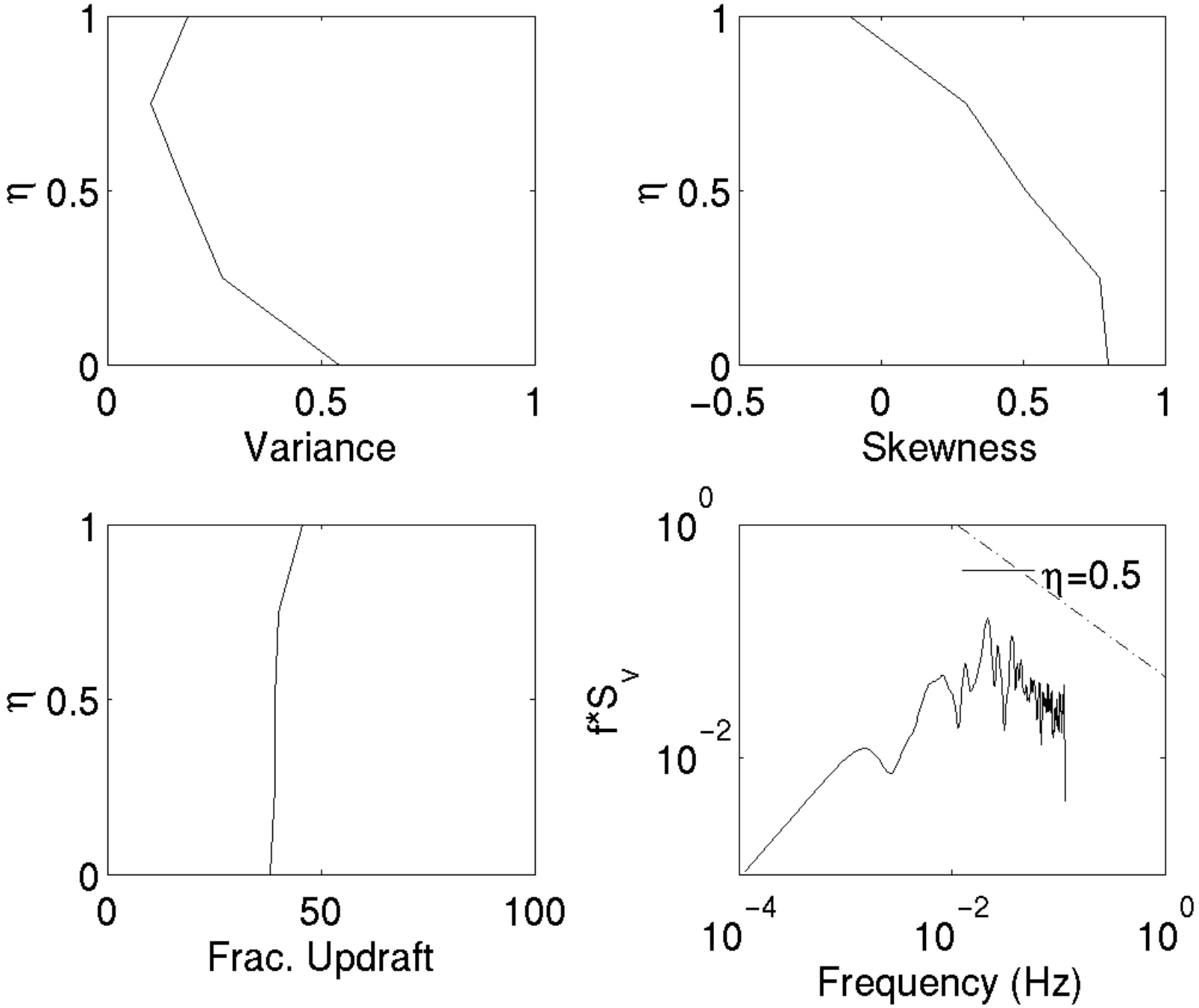
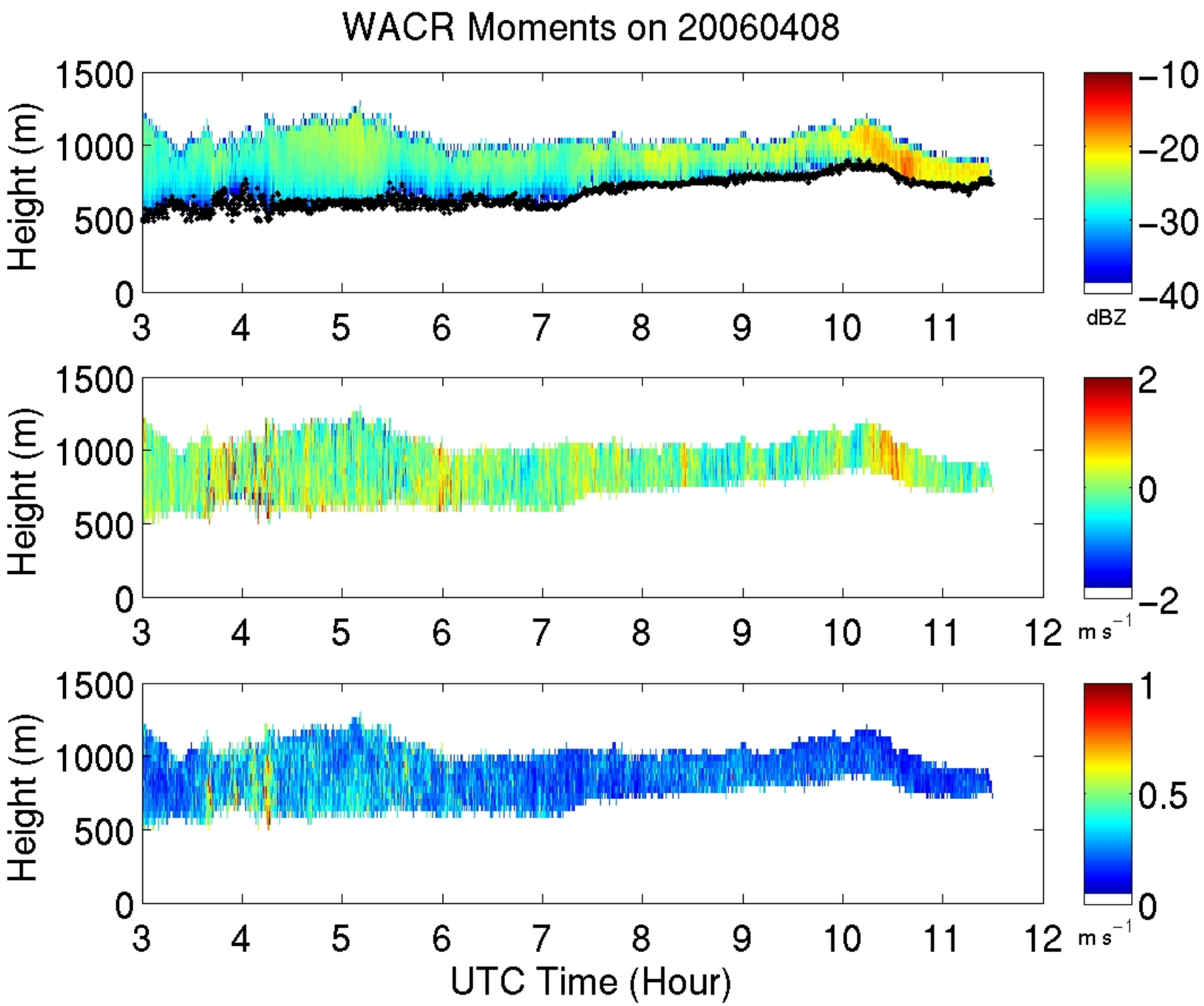
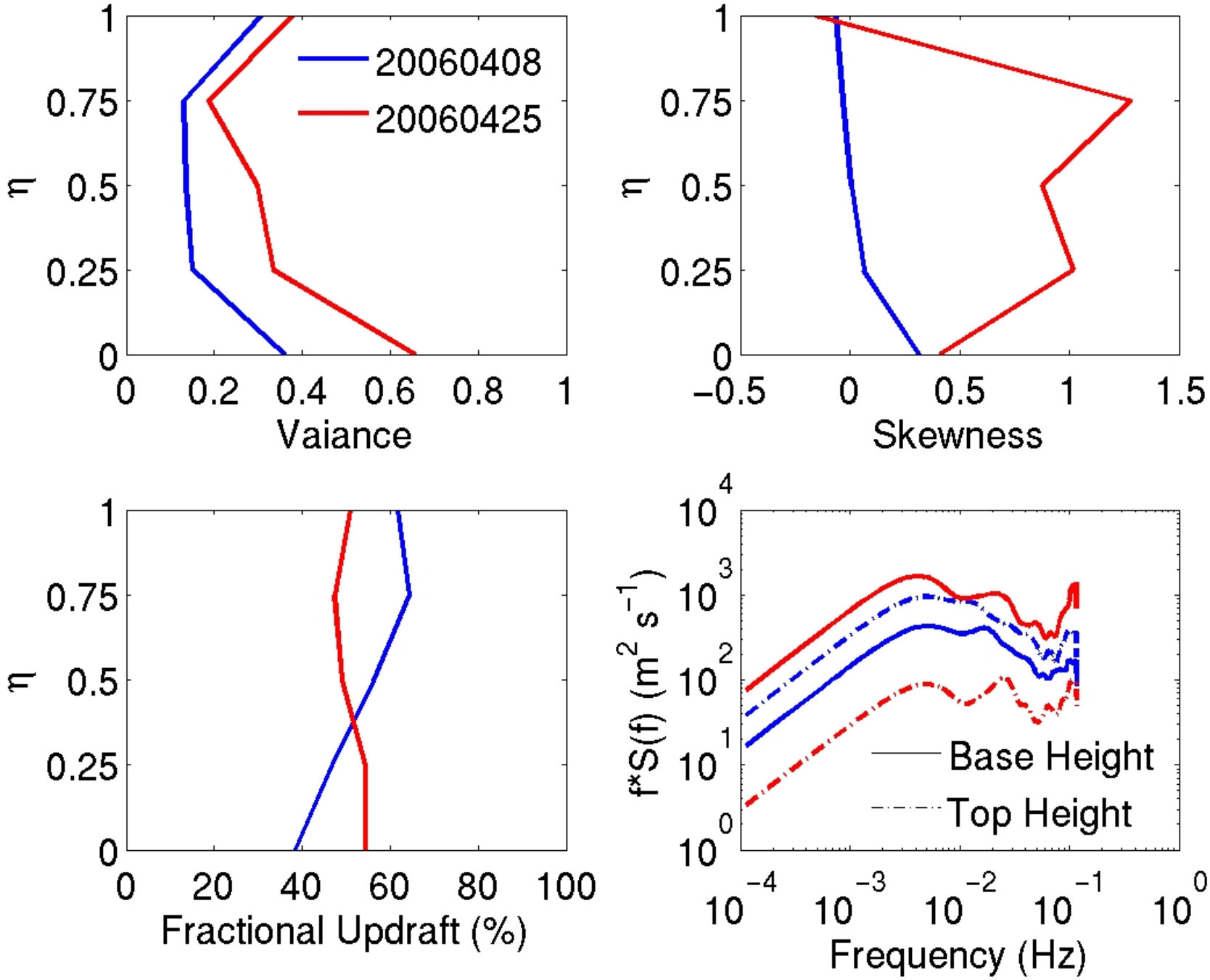

MMCR BL Mode 20060425
Height (m)
3000
2000
1000
0
0
5
10
15
20
−10
−20
−30
−40
−50
dBZ
WACR 20060425
Height (m)
3000
2000
1000
0
0
5
10
15
20
Time (Hour)
−10
−20
−30
−40
−50
dBZ


WACR moments on 20060425
Height (m)
1500
1000
500
0
19
20
21
22
23
24
−10
−20
−30
−40
2
0
−2
1
0.5
0
Time (Hour)


η=0
η=1
η=0.25
η=0.5
V_D (m s^{-1})
2
0
−2
−50
−40
−30
−20
−35
−25
dBZ

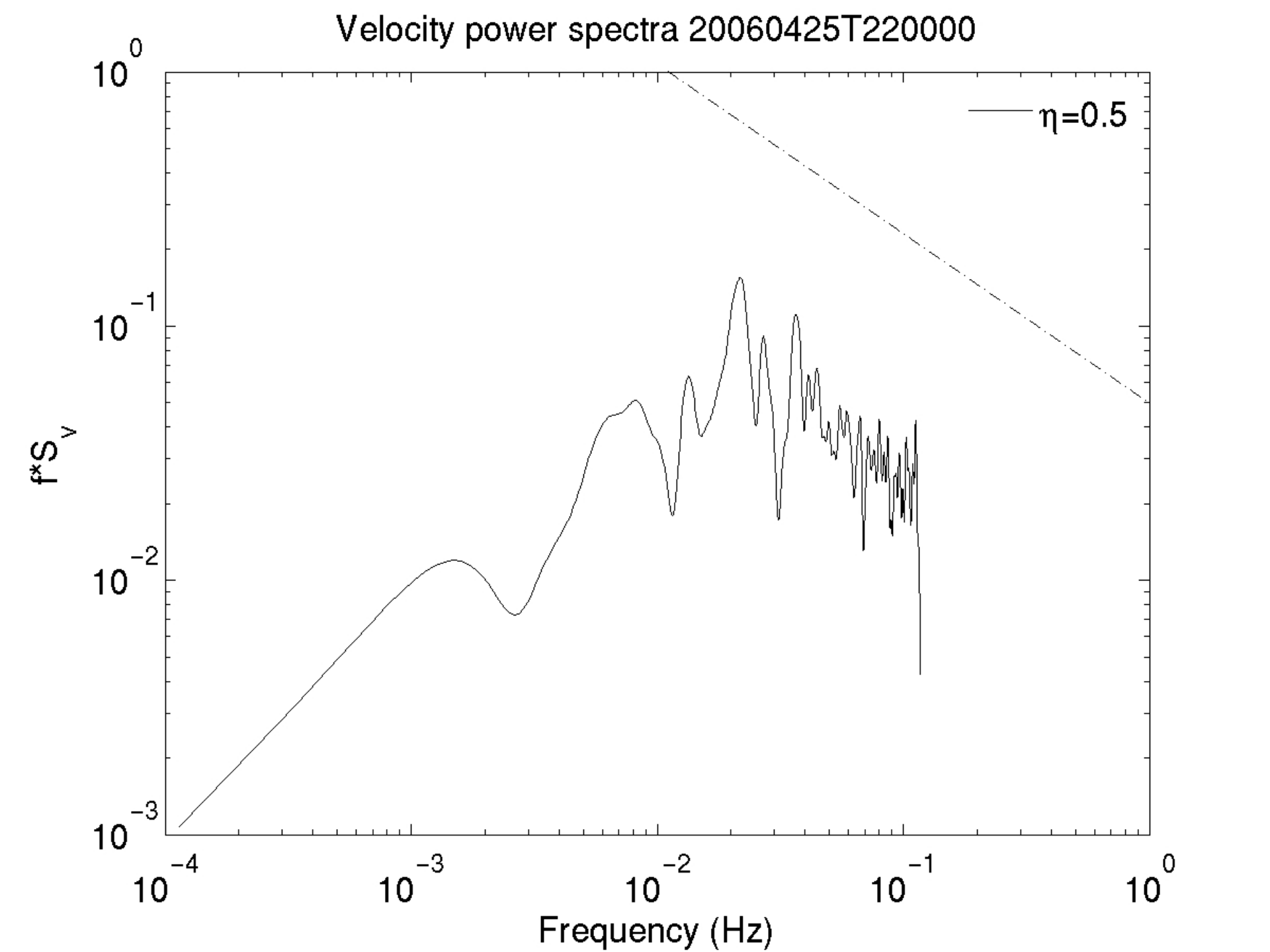

η
1
0.5
0
0
0.5
1
Variance
η
1
0.5
0
−0.5
0
0.5
1
Skewness
η
1
0.5
0
0
50
100
Frac. Updraft
f*S_v
10^0
10^−2
η=0.5
10^−4
10^−2
10^0
Frequency (Hz)


WACR Moments on 20060408
Height (m)
1500
1000
500
0
3
4
5
6
7
8
9
10
11
12
−10
−20
−30
−40
dBZ
2
0
−2
m s^{-1}
1
0.5
0
UTC Time (Hour)


20060408
20060425
η
Vaiance
Skewness
Fractional Updraft (%)
f*S(f) (m² s⁻¹)
Base Height
Top Height
Frequency (Hz)

Observation-Modeling Interface

Parameter	Observational Readiness (/10)	Modeling Need (/10)
Cloud Boundaries	9	9
Cloud Fraction		
Variance		
Skewness		
Up/Downdraft coverage		
Dominant Freq. signal		
Dissipation rate		
???		


Velocity power spectra 20060425T220000
η=0.5
f*S_v
Frequency (Hz)
10^0
10^-1
10^-2
10^-3
10^-4
10^-3
10^-2
10^-1
10^0