

Table 1. Variables observed manually during IOP-2004 by H. Tanaka et al.

Variables	Intervals	Notes
Water temperature	1 hour during daytime, 08:00-17:00 LT	No water before 14 JUN
Soil temperature	1 hour during daytime, 08:00-17:00 LT	At 0.1 m below-ground
Surface temperature	1 hour during daytime, 08:00-17:00 LT	Soil surface before 14 JUN; Water surface after 15 JUN
Vegetation height	Once per day	No vegetation between 31 MAY and 15 JUN
Water depth	Once per day	No water before 14 JUN
SPAD*	Once per day	No vegetation between 31 MAY and 15 JUN
Leaf area index (LAI)	5 times, 25 MAY, 16 JUN, 24 JUN, 30 JUN, 7 JUL	No vegetation between 31 MAY and 15 JUN
Cloud amount	Twice per day	Using fish-eye sky photos and weather condition records
*: An index of the chlorophyll density obtained by a chlorophyll sensor (SPAD-502, Konica Minolta, Japan)		

Table 2. Observed variables and instruments for the surface layer observation system by H. Tanaka et al.

Variables	Instruments	Height or depth (m)
Wind vector and virtual temperature	C-SAT-R3-50 (1210R3), Gill	32.0, 12.2, 3.5
CO ₂ and H ₂ O density	C-CS7500 (LI-7500), Li-Cor	32.0, 12.2, 3.5
Atmospheric pressure	CVS-PTB210, Vaisala	2.5
Wind velocity	C-PR-010C, MetOne	32.2, 21.9, 11.9, 3.0, 1.6
Wind direction	C-PR-020C, MetOne	31.8
Radiation fluxes (four components)	C-PR-CNR1, Kip & Zonen	31.8
Air temperature and humidity	C-PR-45D (HMP-45D), Vaisala	30.7, 20.7, 10.8, 2.8, 1.5
Surface temperature	C-303F	30.7, 2.9
Soil moisture content	C-CS616-30, Campbell	-0.1, -0.2, -0.4
Ground heat flux	C-PRHF01, Huxflux	-0.01, -0.01, -0.01
Ground soil temperature	C-PT100	-0.05, -0.1, -0.2, -0.4, -0.4
Precipitation	COT-34T, Ota Keiki	0
Water level	Floating gauge	0

Table 3. Operation specifications for WPR by H Tanaka et al.

Variables	Values
Radar operational frequency	1290 MHz
Pulse length	666 ns
Sampling interval	666 ns
Inter-pulse period	80000 ns
Number of height points	80
Number of coherent integrations	32
Number of FFT points	128
Number of incoherent integrations	18
Number of beam directions	5
Direction of beam (azimuth, zenith) (deg)	(0, 0), (0, 15), (90,15), (180, 15), (270, 15)

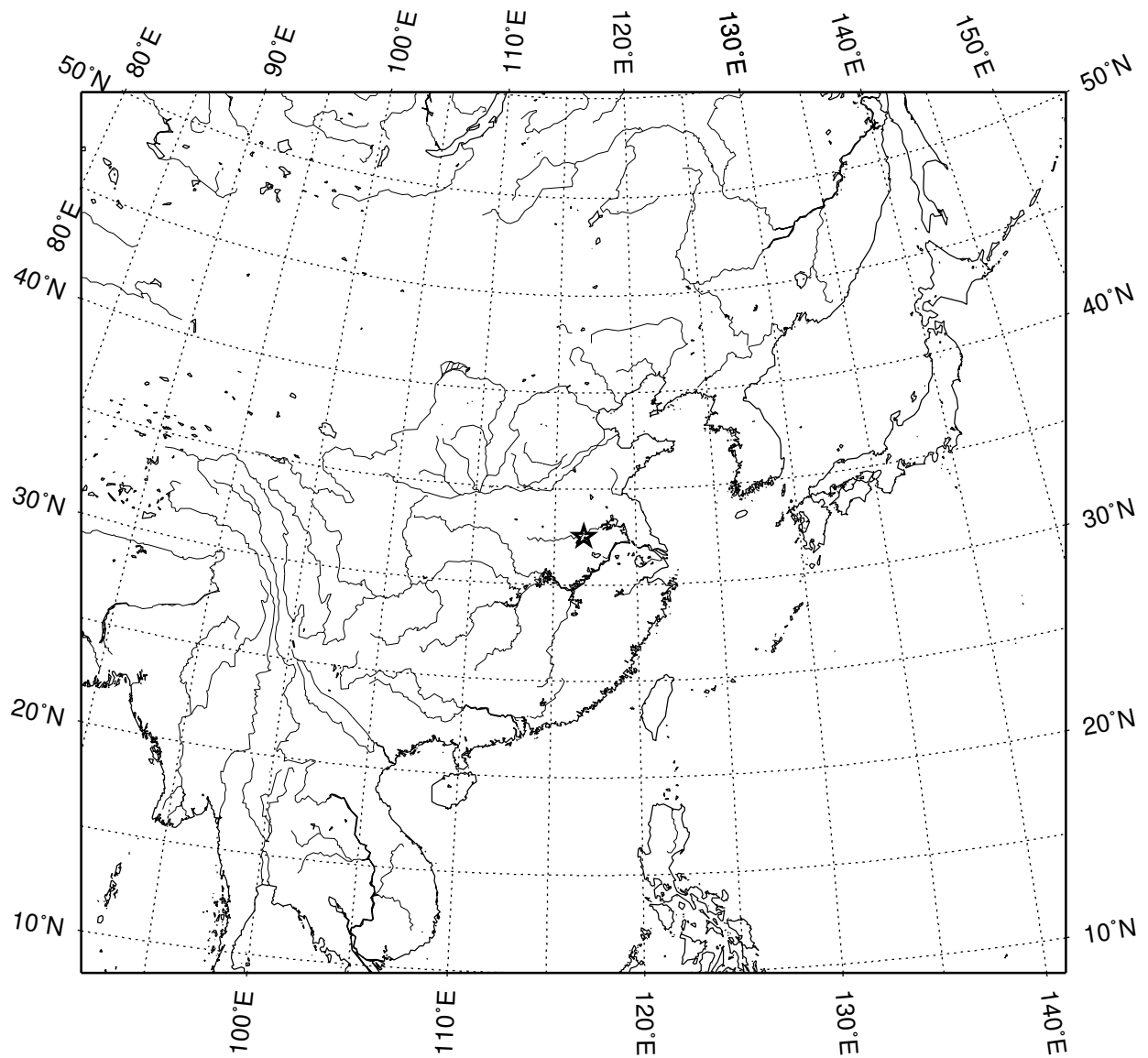


Figure 1 Location of Shouxian, China, LAPS Hiroki TANAKA

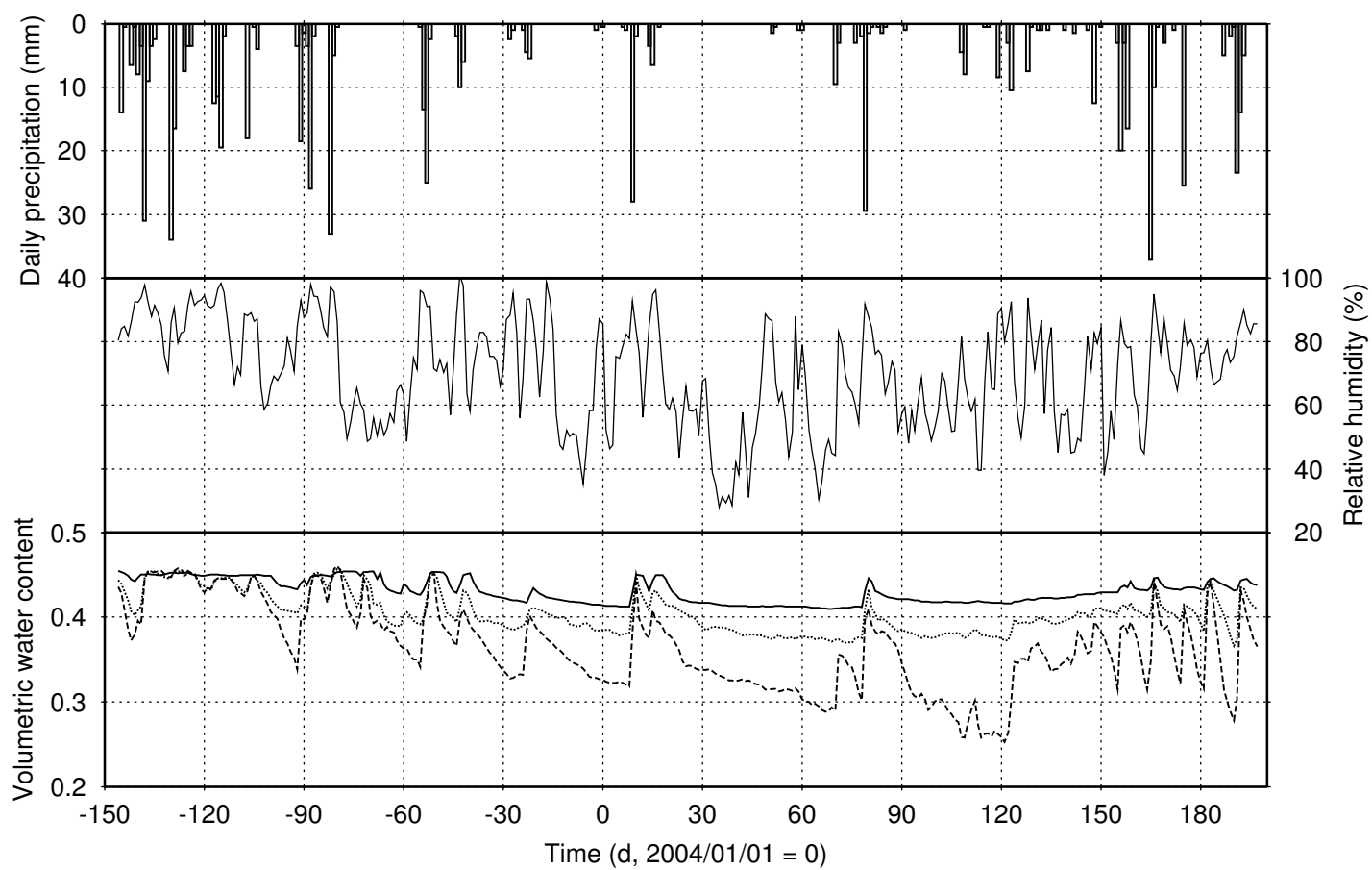


Figure 2 TDR, Humidity and Rain, Shouxian, China, LAPS Hiroki TANAKA

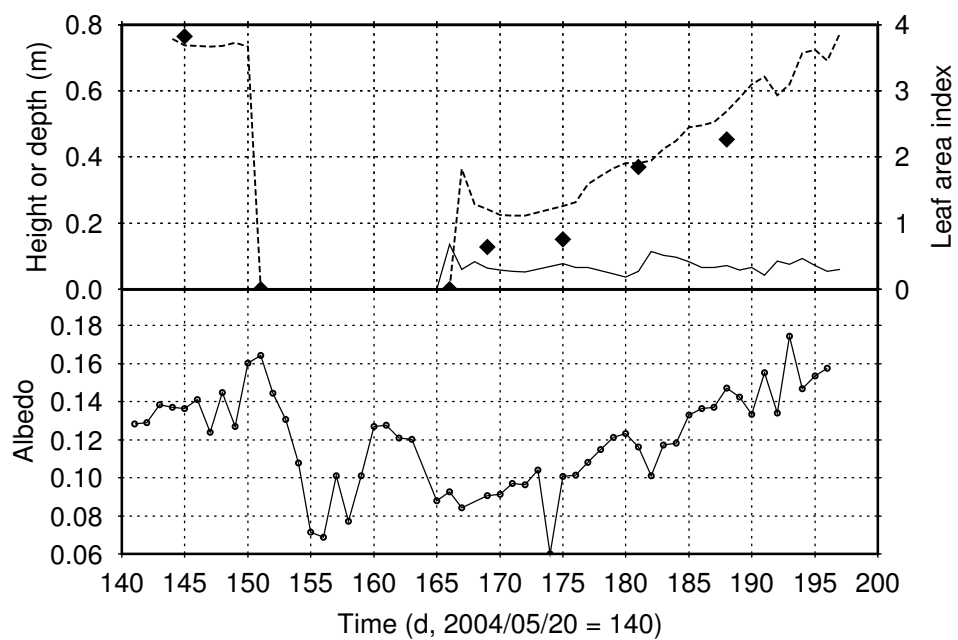


Figure 3 LAI and Albedo, Shouxian, China, LAPS Hiroki TANAKA

(a) Mature wheat on 27 May 2004.



(d) Plowed field on 9 June 2004.



(b) Harvested wheat on 1 June 2004.



(e) Planted rice on 16 June 2004.



(c) Burned field on 3 June 2004.



(f) Growing rice on 26 June 2004.



Figure 4. Land-use photographs by H. Tanaka et al.

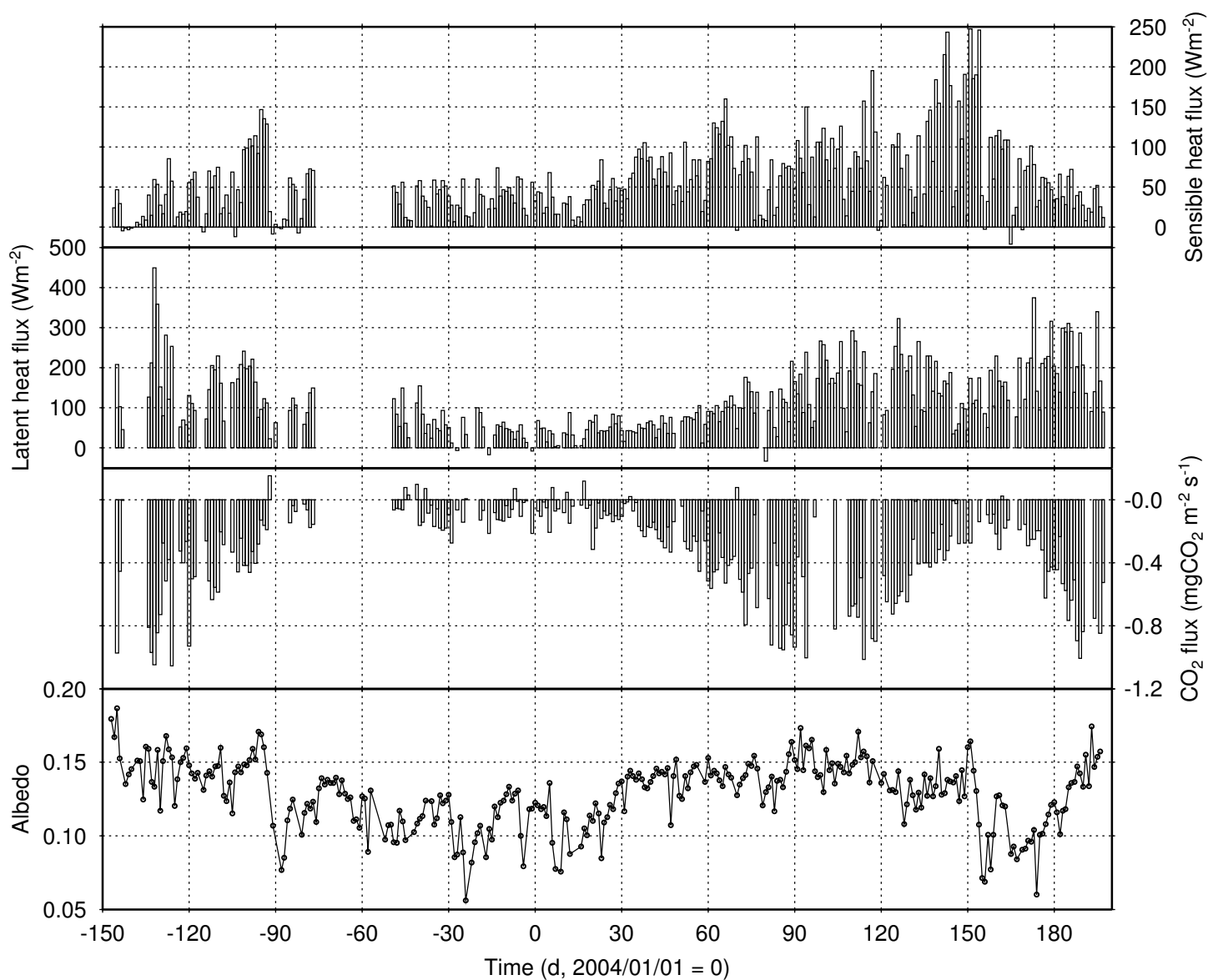


Figure 5 Flux and Albedo, Shouxian, China, LAPS Hiroki TANAKA

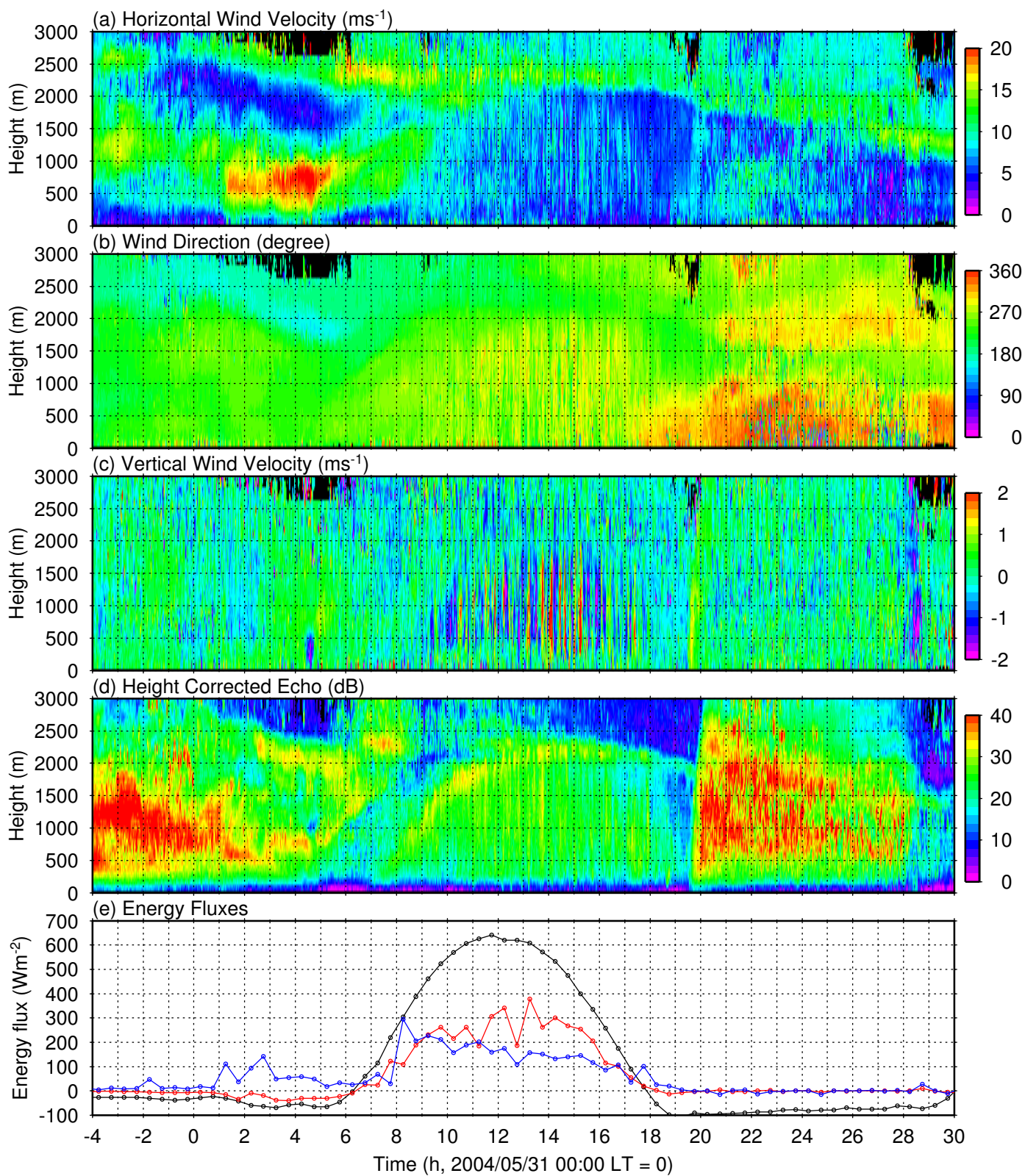


Figure 6 WPR and Flux, Shouxian, China, LAPS Hiroki TANAKA

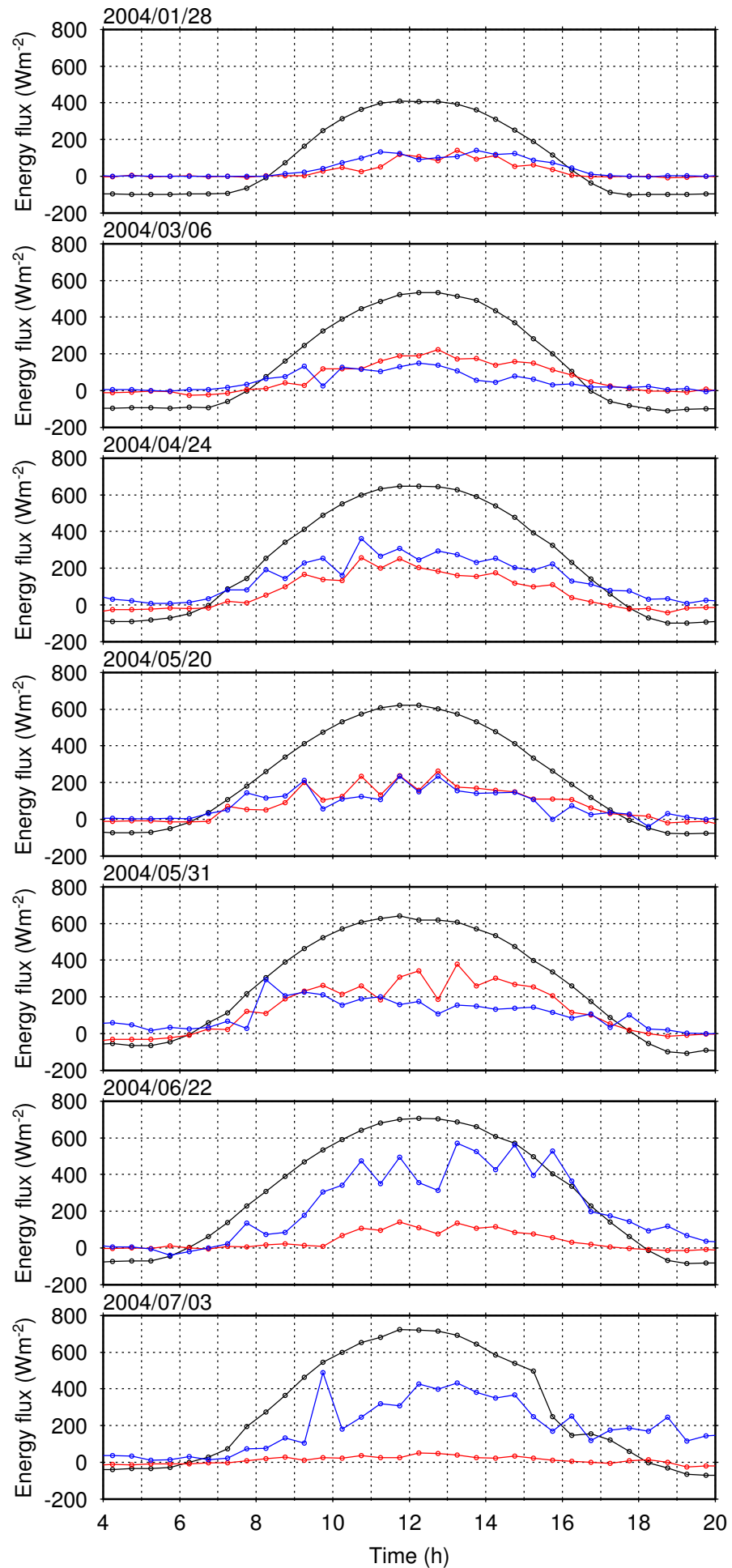


Figure 7 Fluxes, Shouxian, China, LAPS Hiroki TANAKA

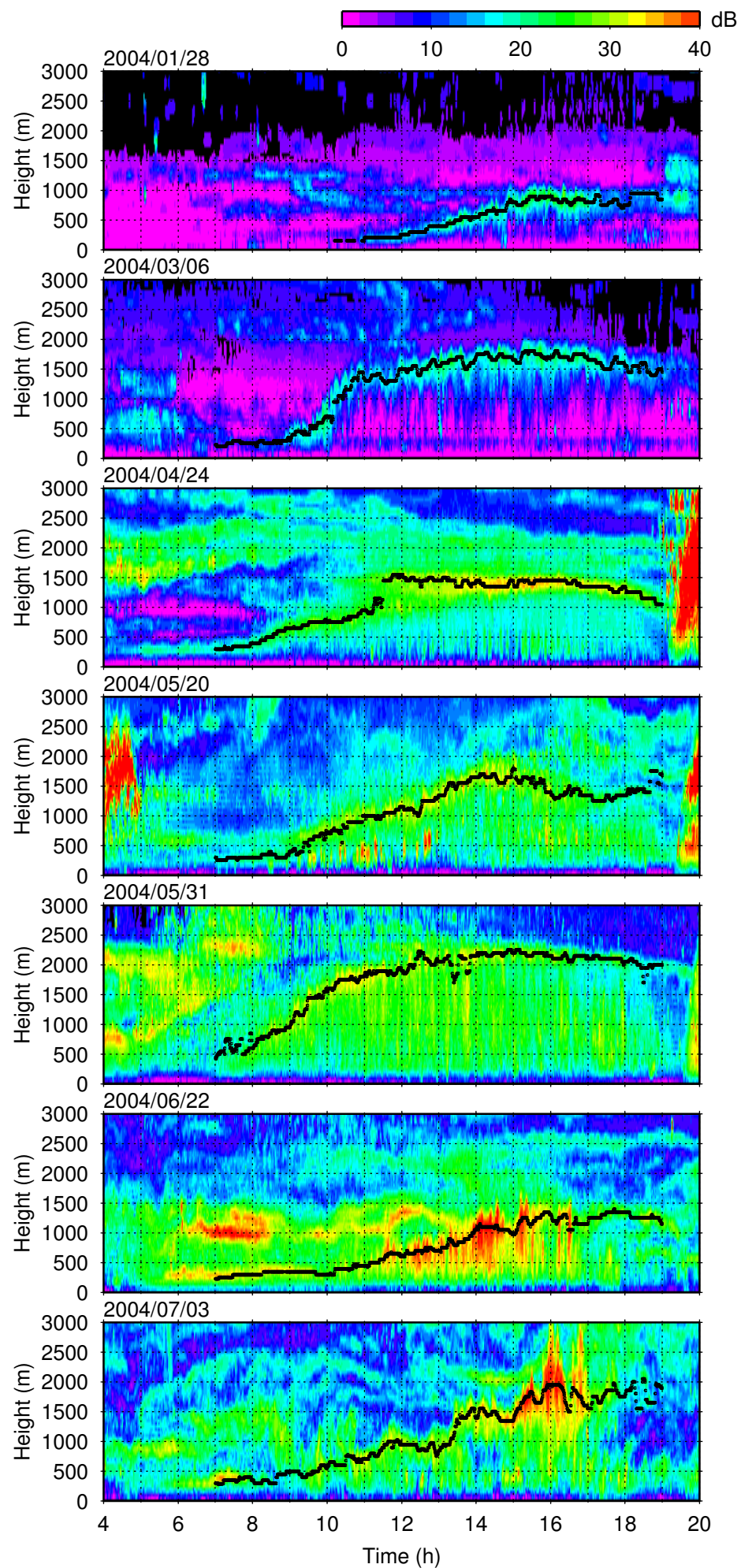


Figure 8 WPR (L-28, SEI), Shouxian, China, LAPS Hiroki TANAKA

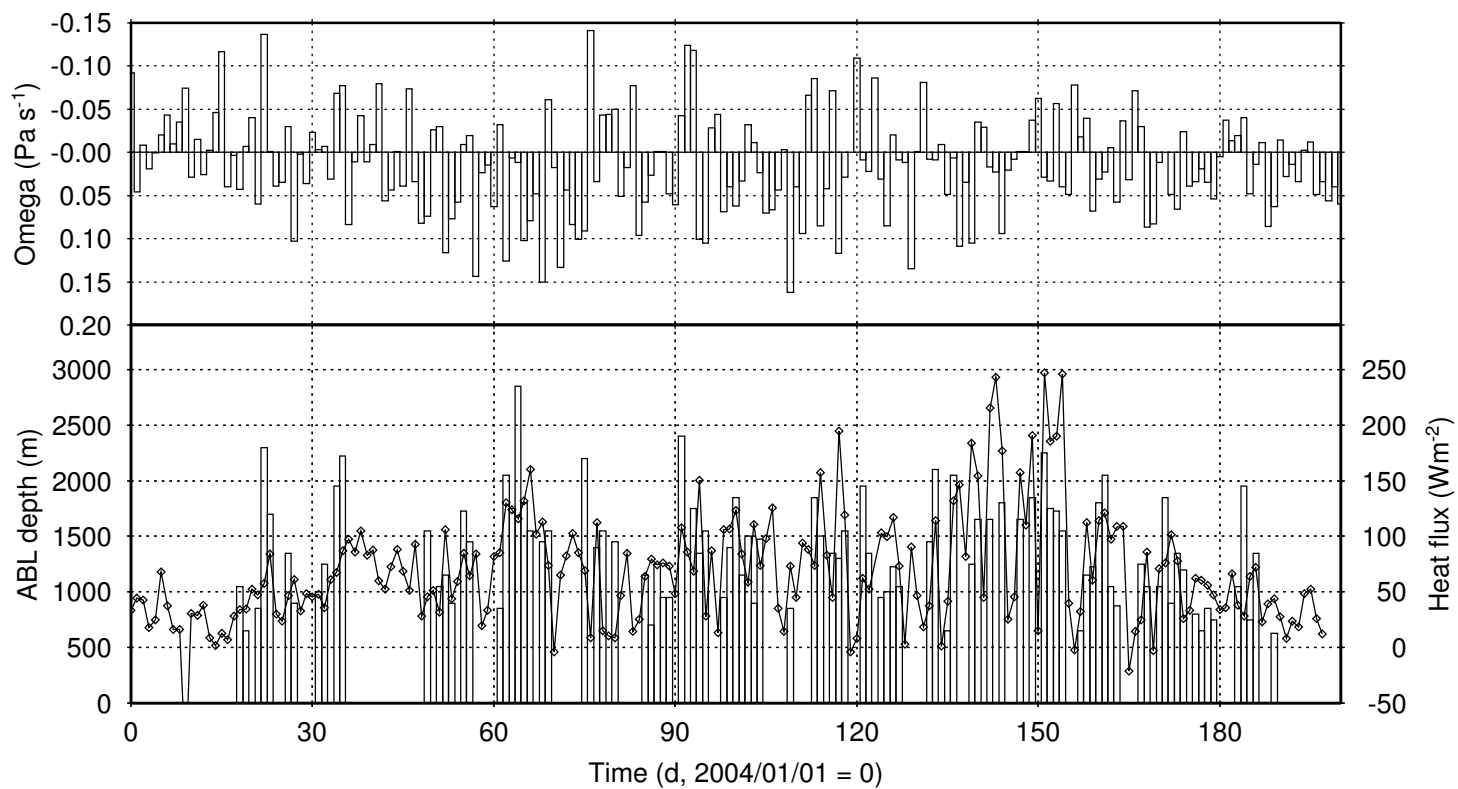


Figure 9 ABL depth, Heat flux, and Omega 00Z 32.5N 117.5E NCEP/NCAR, LAPS Hiroki TANAKA

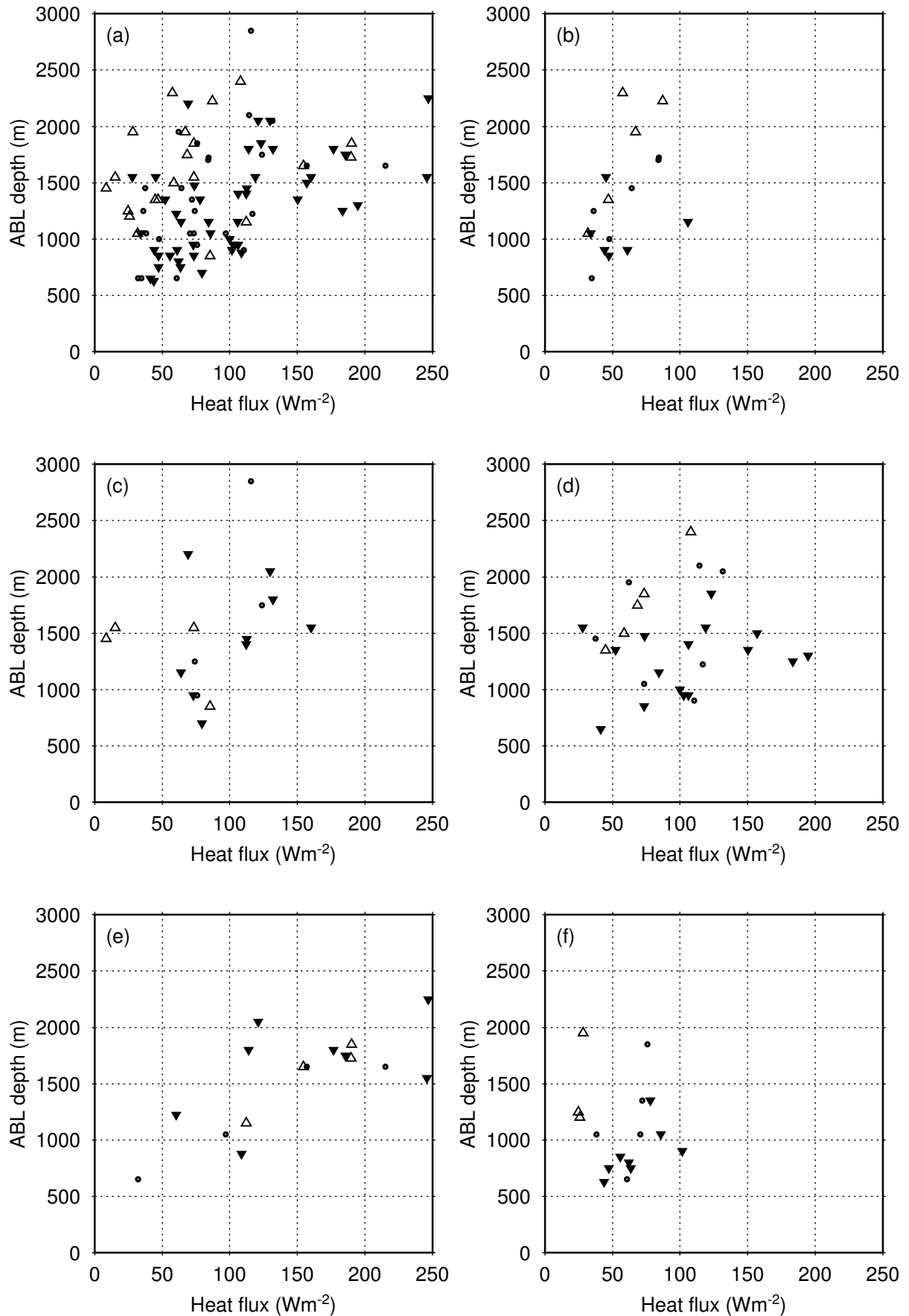


Figure 10 Relationship between Flux and ABL depth, Shouxian, China, LAPS Hiroki TANAKA