12Z 10 Aug 2011

PRES hPa	HGHT m	TEMP C	DWPT C	RELH %	MIXR g/kg	DRCT deg	SKNT knot	THTA K	THTE K	THTV K
1000.0	58									
925.0	737									
922.0	766	12.4	10.9	91	8.95	0	0	292.2	318.0	293.8
919.0	793	14.8	12.3	85	9.87	350	4	295.0	323.6	296.7
906.0	914	15.6	10.9	73	9.09	305	19	297.0	323.6	298.6
893.0	1037	16.4	9.4	63	8.35	301	19	299.1	323.9	300.6
883.0	1133	19.0	6.0	43	6.68	298	18	302.7	323.0	303.9
874.1	1219	18.5	5.1	41	6.35	295	18	303.1	322.5	304.3
861.0	1349	17.8	3.8	39	5.87	292	15	303.7	321.7	304.7
850.0	1458	17.0	3.0	39	5.62	290	12	303.9	321.2	305.0

00Z 11 Aug 2011

PRES hPa	HGHT m	TEMP C	DWPT C	RELH %	MIXR g/kg	DRCT deg	SKNT knot	THTA K	THTE K	THTV K
1000.0	53									
925.0	736									
922.0	766	23.0	13.0	53	10.31	0	0	303.1	334.0	305.0
917.0	813	22.2	9.2	43	8.02	2	0	302.8	327.0	304.2
906.3	914	21.2	9.2	46	8.10	5	1	302.8	327.2	304.3
874.6	1219	18.3	9.1	55	8.34	0	5	302.9	328.0	304.4
850.0	1464	16.0	9.0	63	8.54	20	9	302.9	328.6	304.4

On this afternoon sounding, potential temperature is constant so we can deduce $T(z)$ for any z .

Compute the difference between the sensible heat content below 850 hPa in the afternoon and in the morning. Do this by assigning an afternoon T for each height on the morning sounding. Next get the ΔT for each height. Multiply each ΔT by the ρc_p for that height. Then do a summation from ground (922 hPa) to 850 hPa, summing terms of the form $\rho c_p \, \Delta T \, \Delta z$