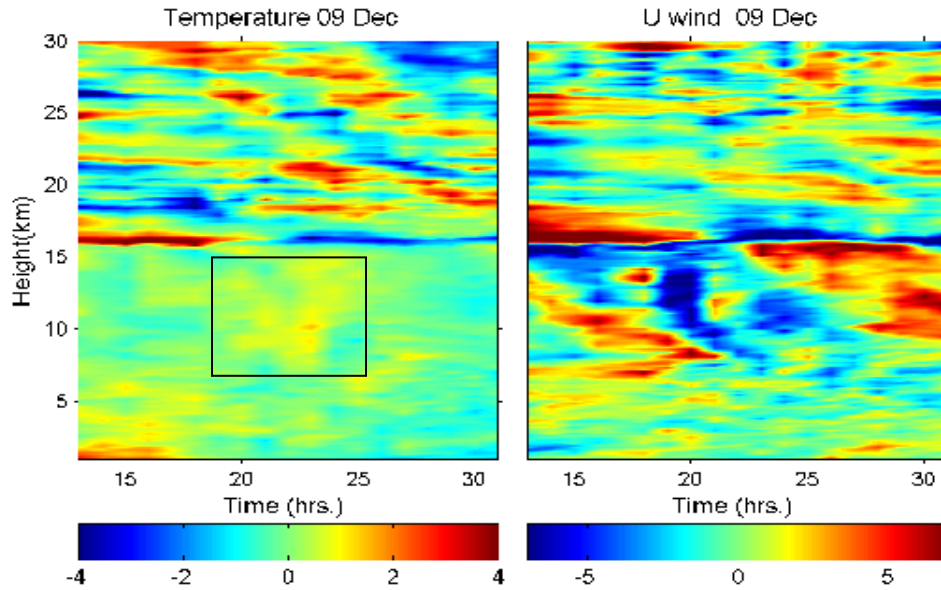
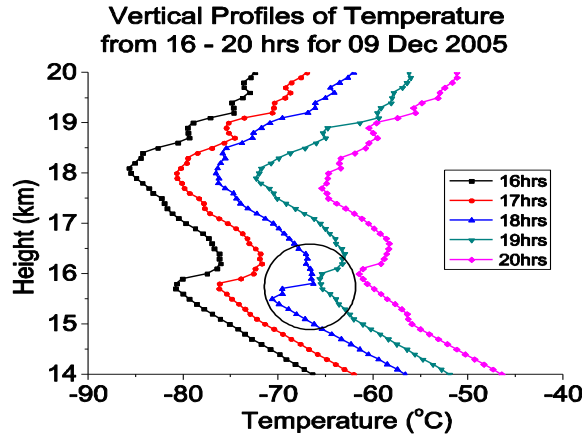


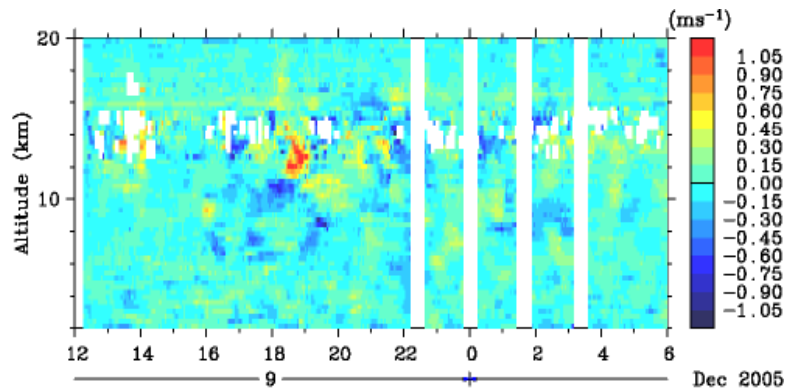
## Auxiliary Material



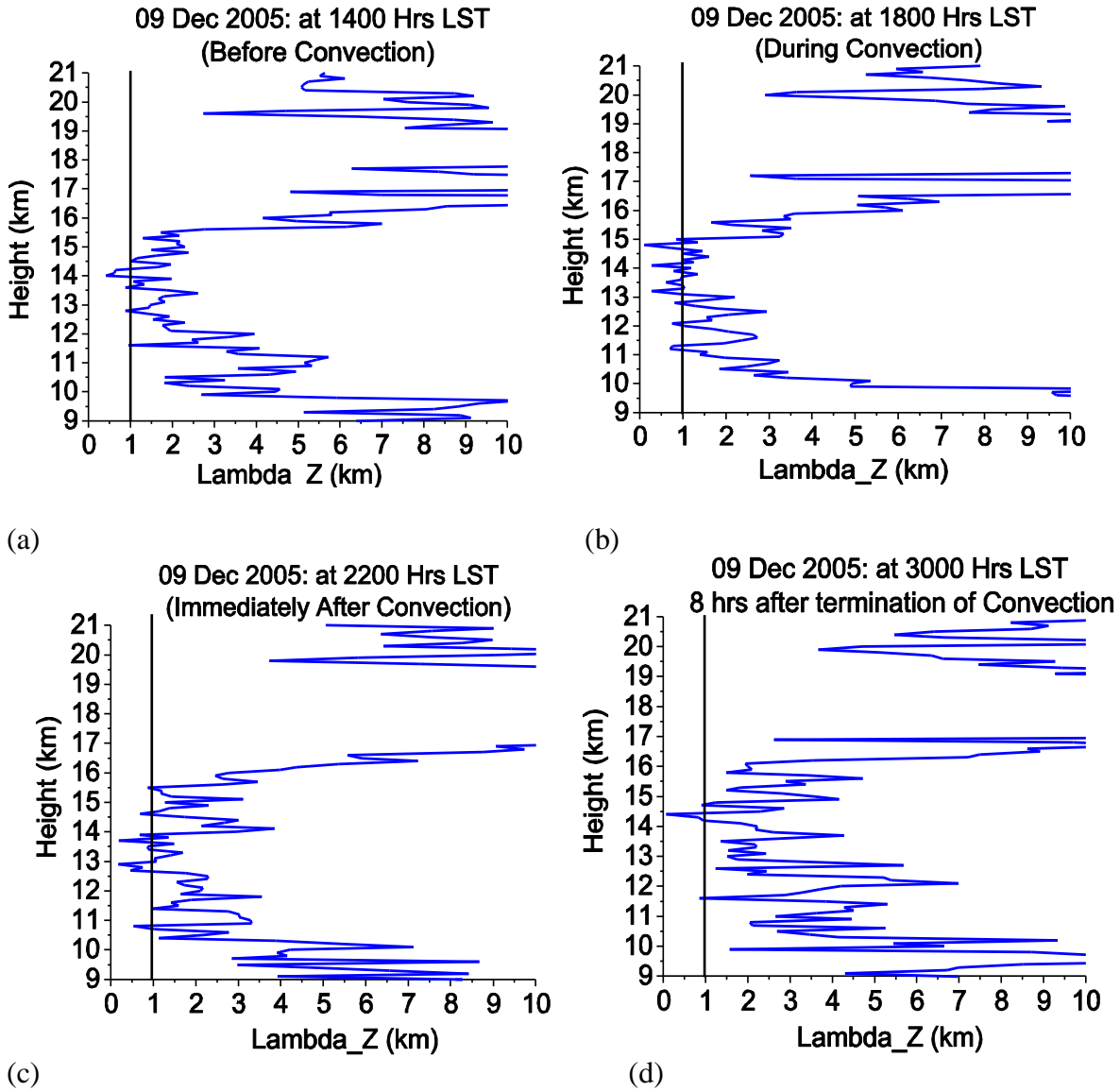
**Figure A1:** Temperature (left panel) and wind anomalies (right panel) on 09 Dec 05. Around 18 Hrs LST (time of active convection), change in temperature and wind anomalies in the middle and upper troposphere are quite evident. Middle tropospheric environment appears little warmer (area denoted by a rectangle), which is set in near active convection period, than the environment of before and after termination of convection. Wind anomalies in zonal component appear strongly near active convection (nearly reversal of wind is seen during convection) in the middle and upper troposphere.



**Figure A2:** Temperature profiles are shown between 14 and 20 km heights during active convection period (profiles from left to right denotes launching timings 16, 17, 18, 19 and 20 LST, respectively on 09 Dec 2005; a number ‘5’ is added to displace the profiles rightward). Profile with blue color shows a clear change in temperature near active convection period (18 hrs LST) at ~ 15 - 16.5 km heights in comparison to other temperature profiles. Change in structure of profiles, at 18-19-20 Hrs LST in a height range of 15-17 km occurs due to convection.



**Figure A3.** Vertical wind observation using Equatorial Atmosphere radar (EAR) at Koto Tabang, Indonesia on 09 Dec 2005. Around 18-22 Hrs LST (during active convection period) vertical wind enhanced in the upper troposphere.



**Figure A4.** Height profiles of  $\lambda_z$  i.e. ' $2\pi*N/U$ ' illustrate that waves larger than  $\lambda_z$  can propagate in a particular height region at different timings (1400, 1800 Hrs LST – upper panel, 2200 and 3000 (0700 Hrs – next day) LST – lower panels on 09 Dec 2005). Symbols 'N' and 'U' denote Brunt Vaisalla frequency and horizontal wind at different heights levels, which are obtained from radiosonde. Near 10-15 km height, waves with short  $\lambda_z$  (~ 1-2 km) possibly can propagate upward; however, near 16 -17.2 km height short vertical wavelength can not propagate it seems they dissipate in this region (which is a region of strong wind shear).