

Fig. 8. Correlation between measured and calculated XCO_2 from the ground to the aircraft height. Asterisk (*): 10 000 ft, Triangle (Δ): 6500 ft, circle (\circ): 5000 ft, square (\square): 3300 ft, cross point (+): 1600 ft. RED: 14 February (Tsukuba), GREEN: 14 February (Koganei), BLUE: 20 February (Tsukuba), PURPLE: 23 February (Tsukuba).

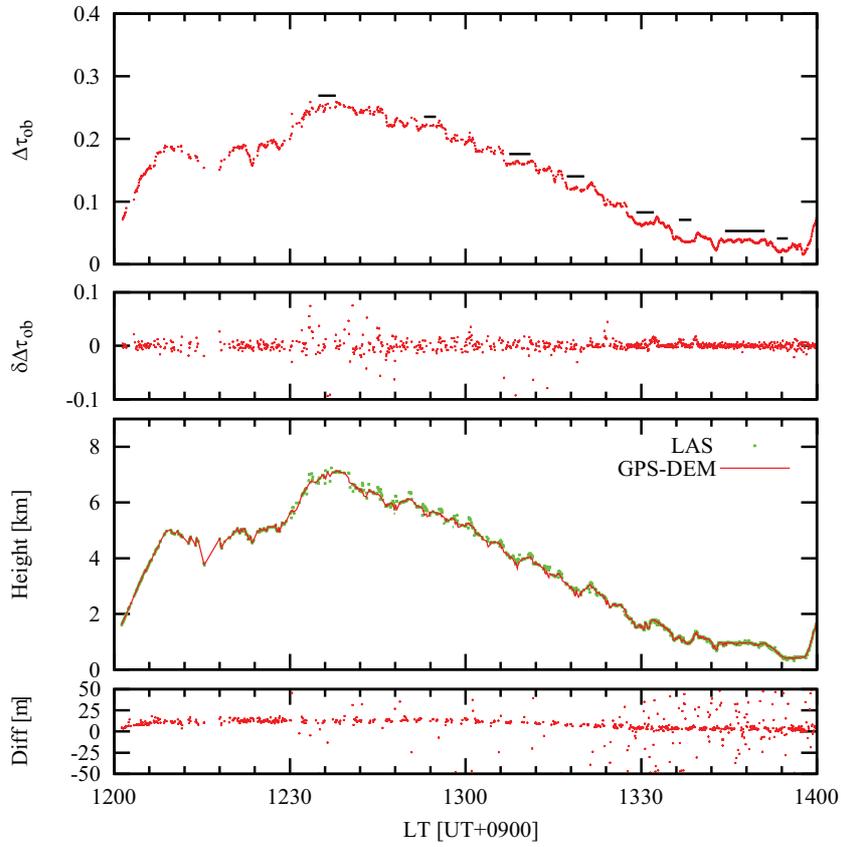


Fig. 5. Results of airborne flight measurements taken on 26 August 2009. The upper two panels show the differential absorption optical depth ($\Delta\tau$) and its fluctuations versus time, and the lower two panels represent the heights and their differences obtained from LAS and airborne GPS and DEM. The LAS measurement was carried out with cloud screening. XCO_2 is calculated from averaged $\Delta\tau$ indicated by solid line in the top panel. The measured data from the LAS were corrected according to the information flight attitude. However some peaks at $\Delta\tau$ and aircraft height resulted from imperfect correction of the viewing angle.

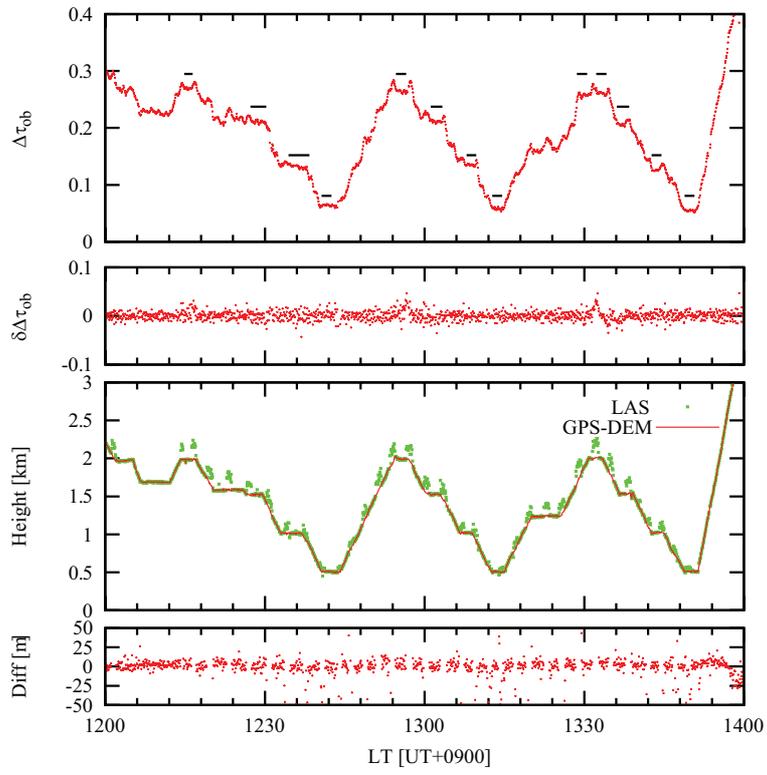


Fig. 6. Results of airborne flight measurements taken on 23 February 2010. These data were taken over the Tsukuba site (urban area).