

Passage of a well marked humidity discontinuity similar to a sea breeze front.

During the early evening of 2nd April 2007, there was a strong and sudden rise in humidity at 1.2 m, recorded on the automatic weather station (AWS) at Wokingham. The event was brought to my attention by Mr Stephen Burt, who noticed an almost identical rise at his weather station at Stratfield Mortimer, about 14 km to the west-southwest of Wokingham. At the time, the temperature was falling fairly steadily under clear skies, and there does not seem to have been any significant discontinuity in temperature at the time of the humidity change. The wind, however, does show a marked backing at the time, accompanied by a modest increase in speed. While these changes may have been associated with the arrival of air of marine origin, it is unlikely to have been a true classical sea breeze, as the easterly gradient was probably too strong to allow one to form. However, the rise in humidity may have been associated with the fairly rapid stabilisation of the lower atmosphere in response to the diurnal cycle, and associated reduction in boundary layer height, trapping the higher humidity marine source air near the surface and forming a meso-scale front between it and the previously well mixed boundary layer air.

The graphs on page 2 below show the Wokingham AWS data for the period 1700 to 2000 GMT on the 2nd April 2007.



