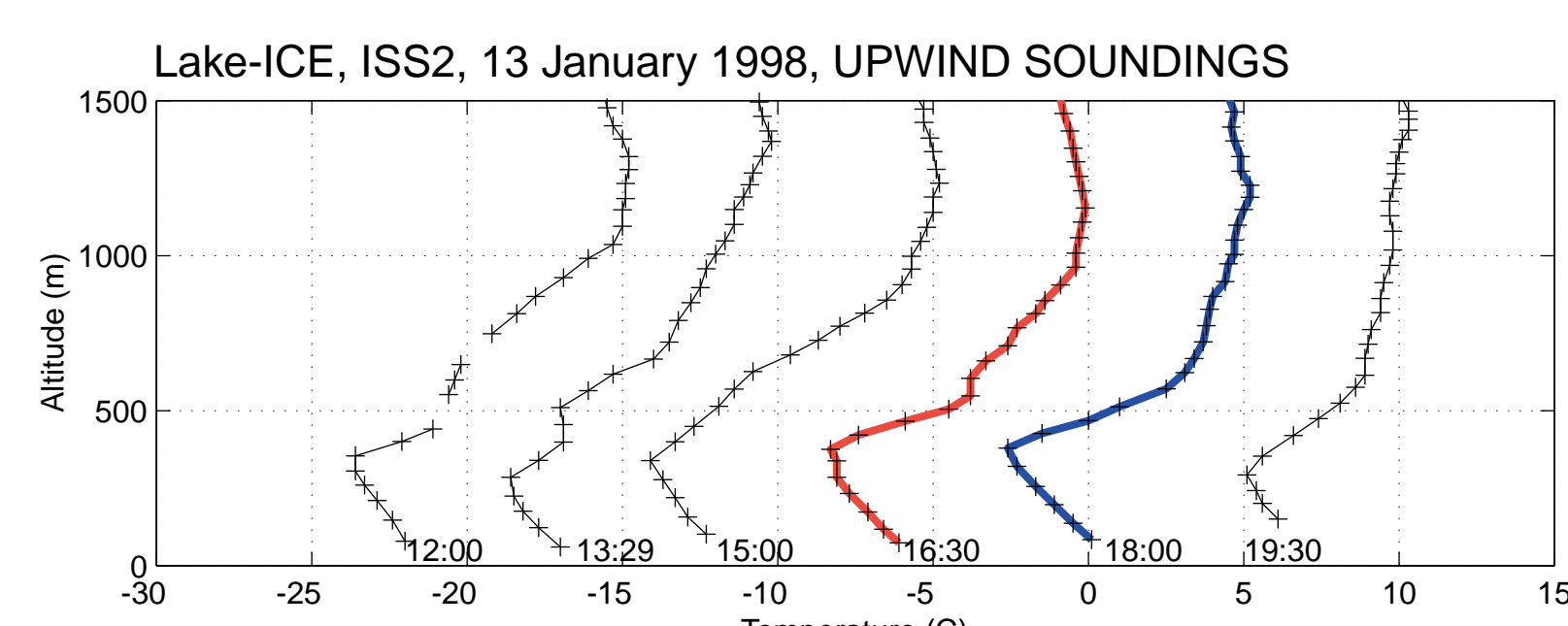
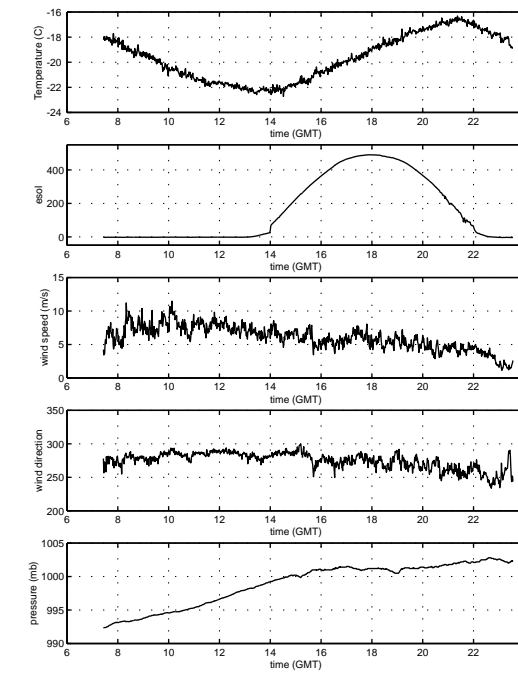
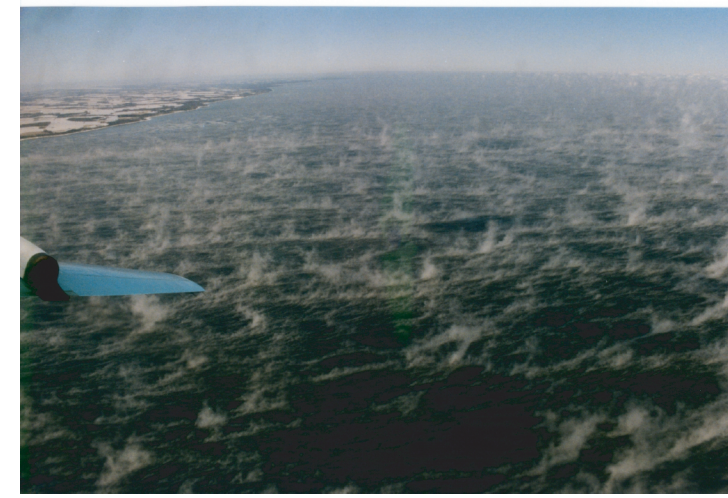
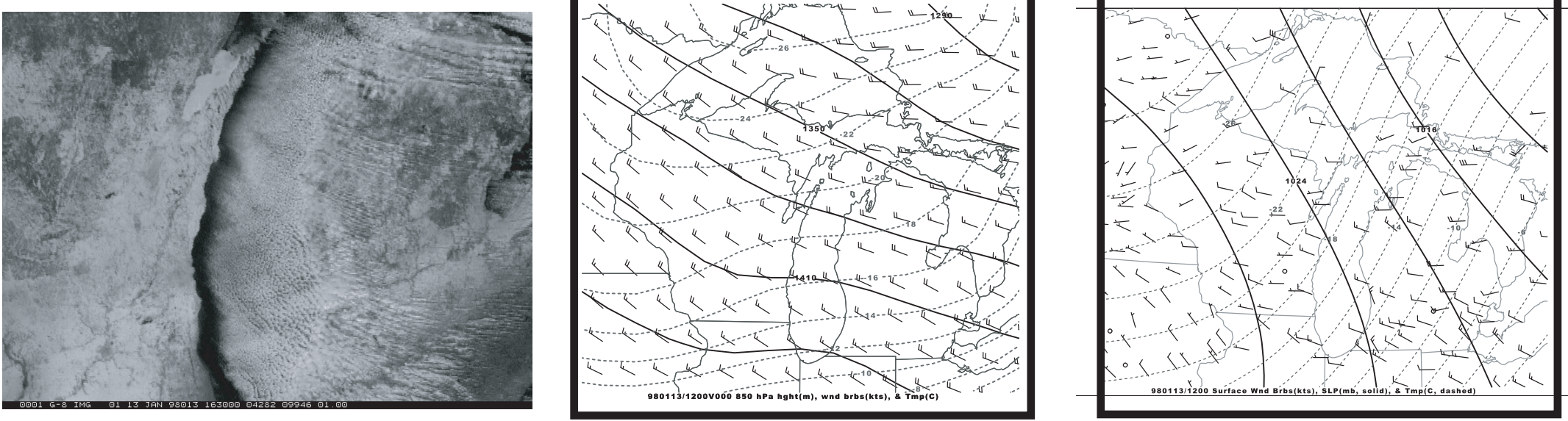


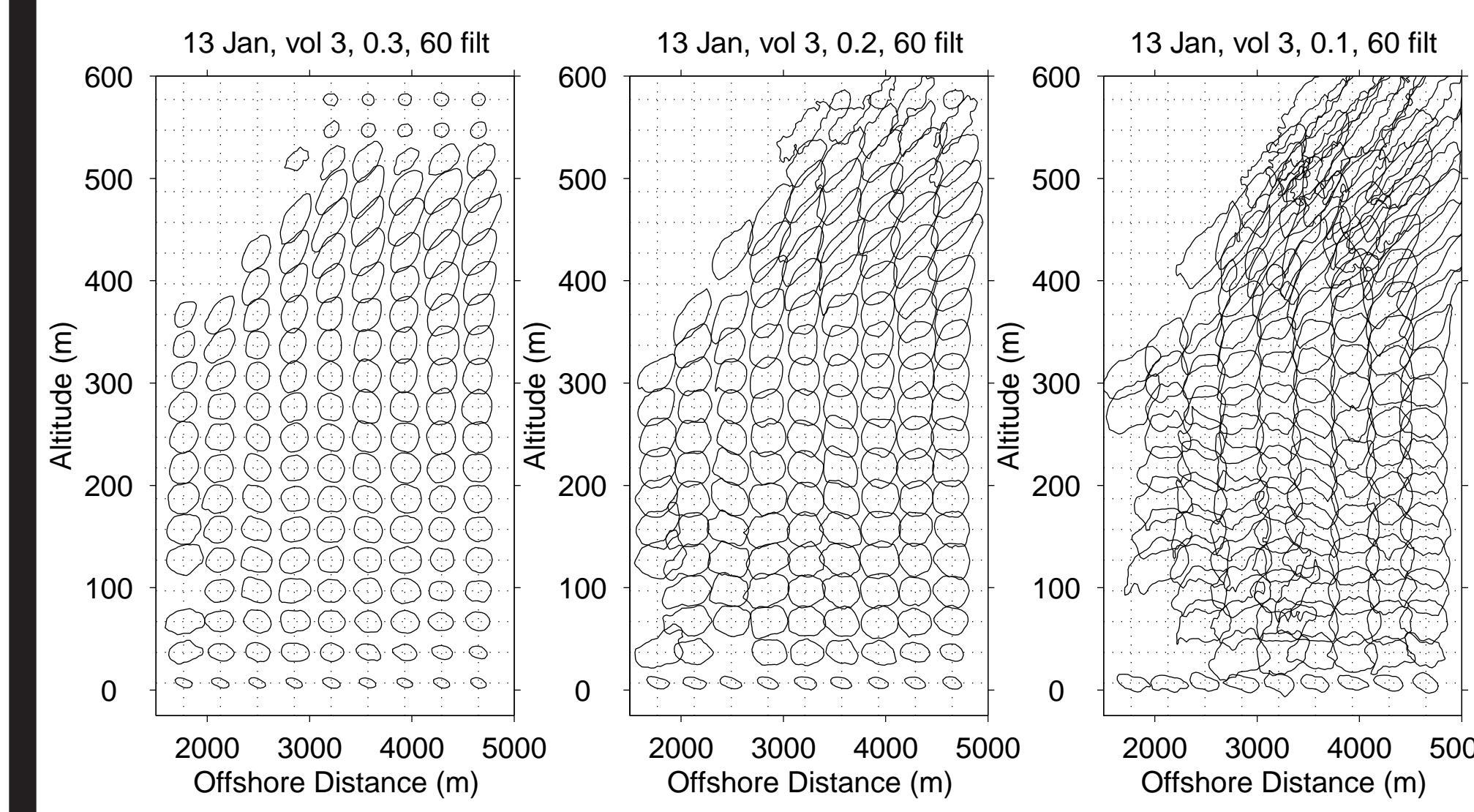
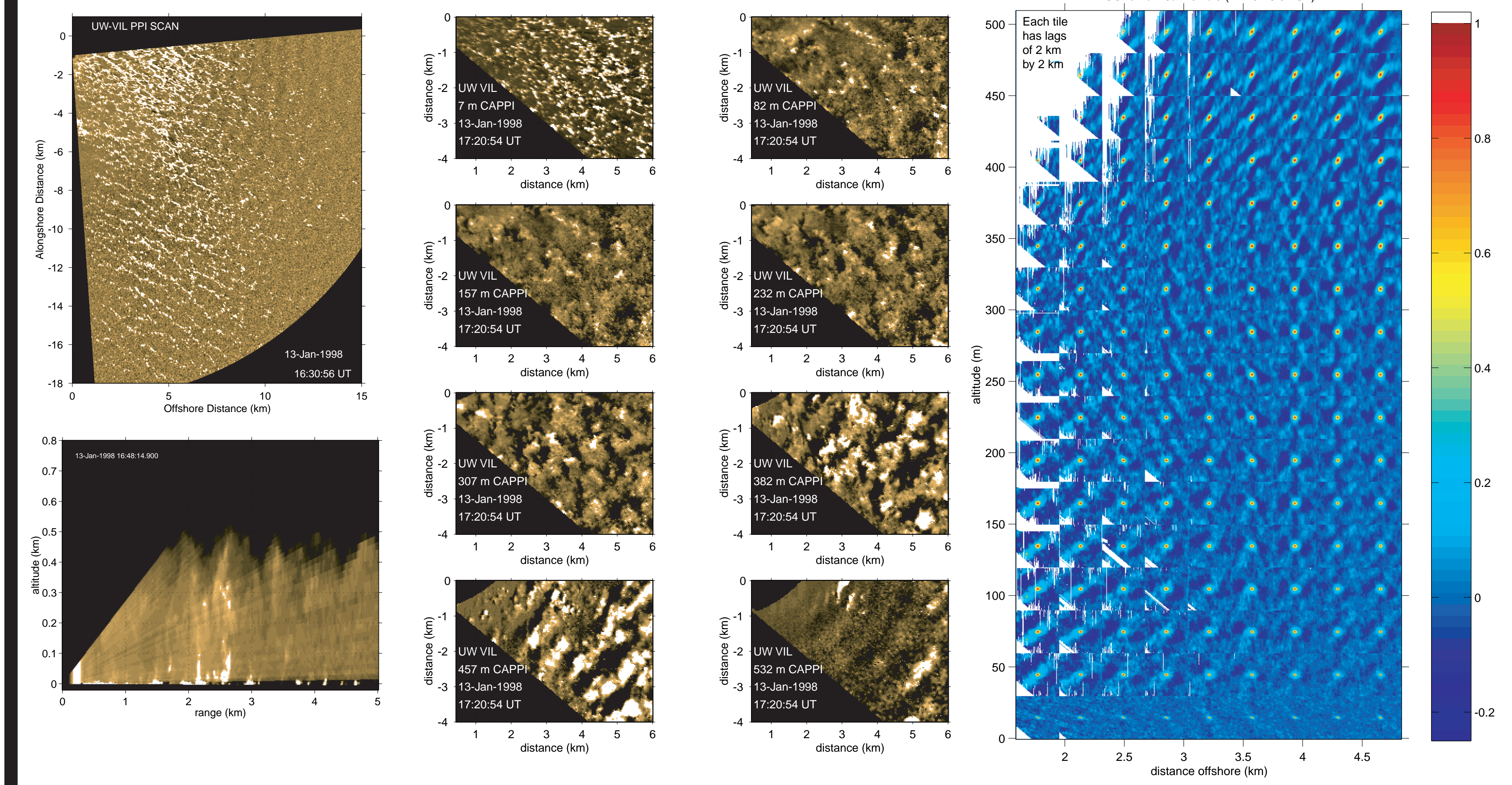
Volume Imaging Lidar Observations and Large-eddy simulations of Convective Internal Boundary Layers

Shane D. Mayor, Gregory J. Tripoli, and Edwin W. Eloranta
 Department of Atmospheric Sciences
 University of Wisconsin, Madison

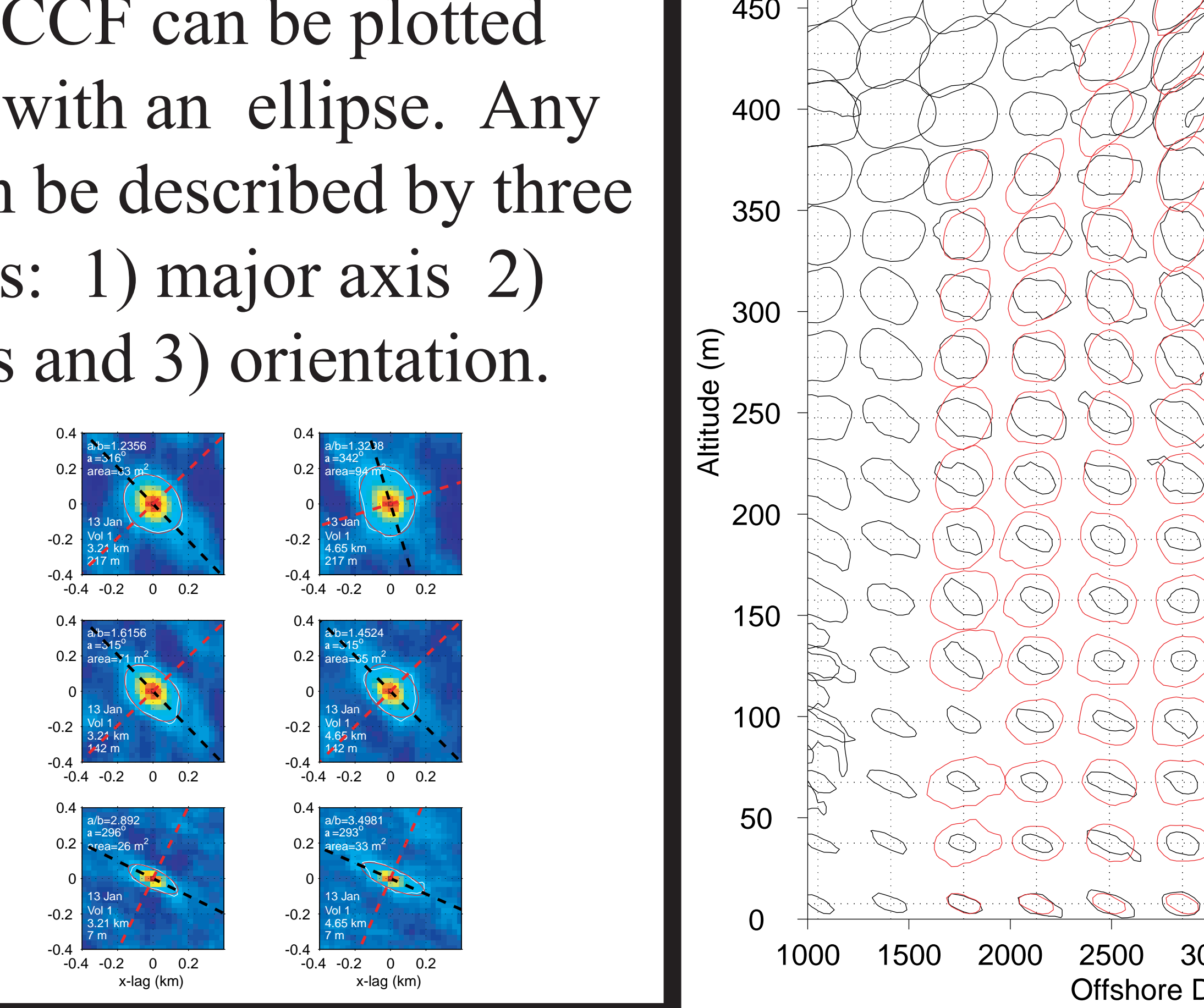
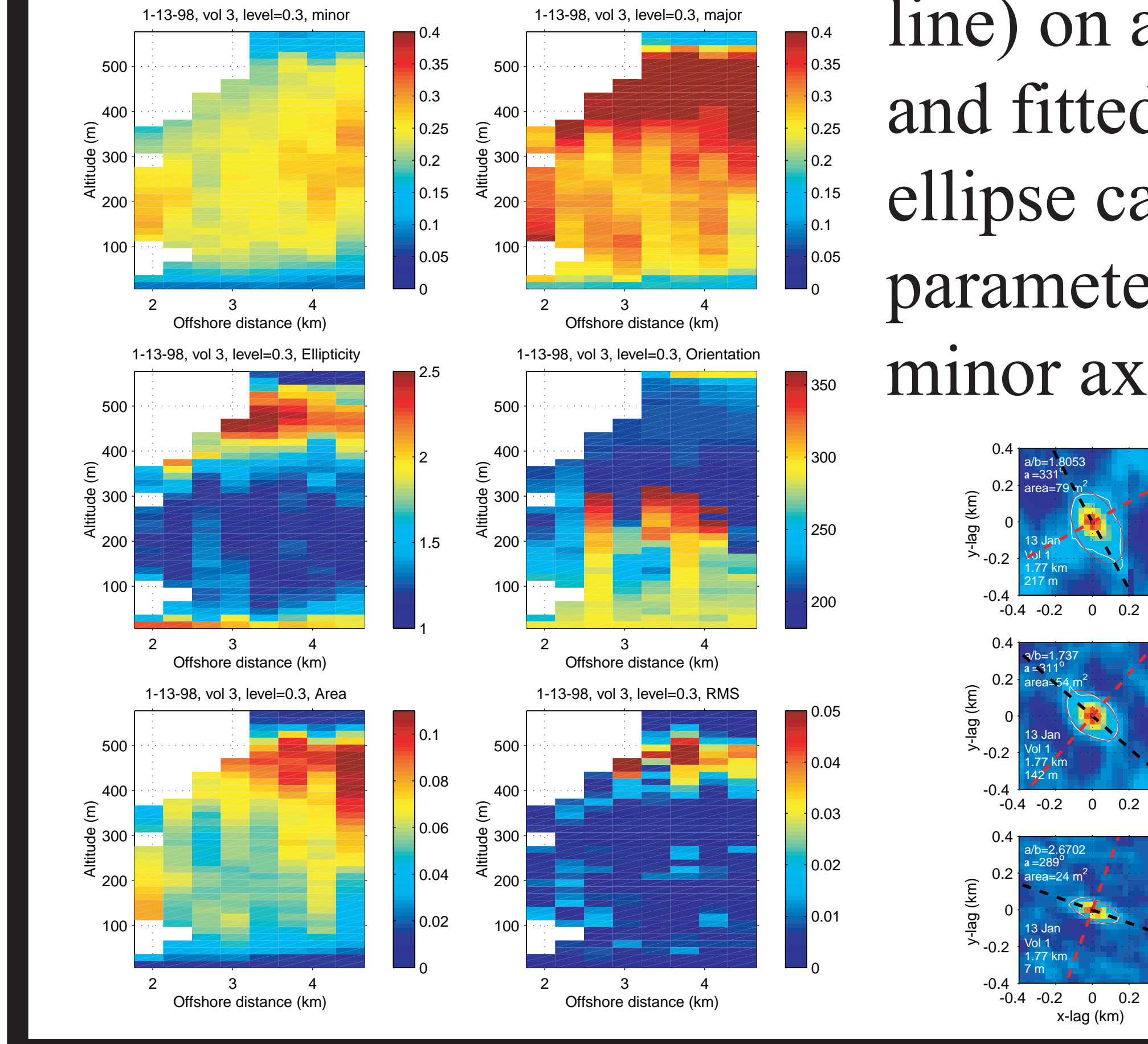


More comparisons of correlation functions

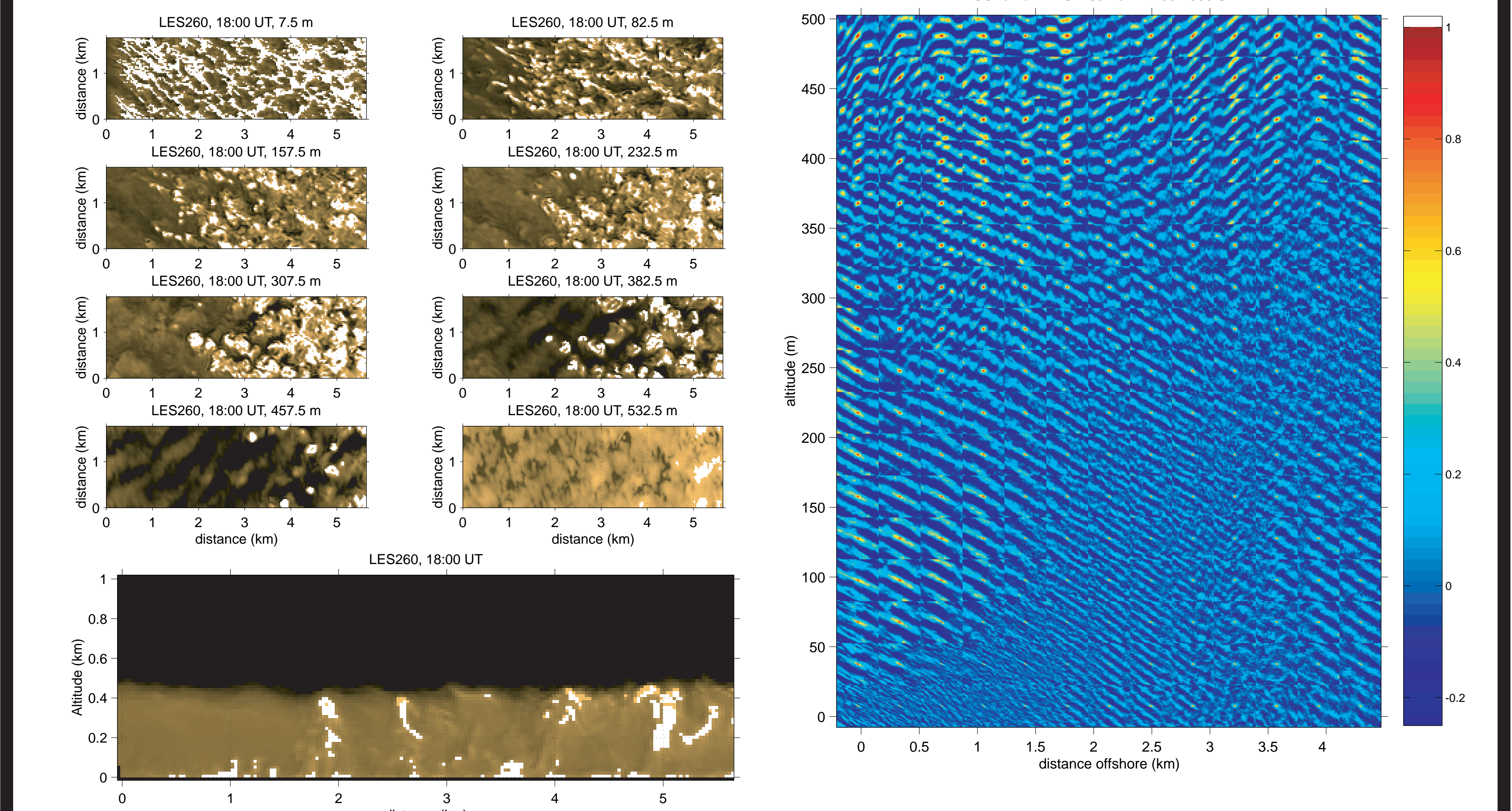
Volume Imaging Lidar Observations



2D correlation functions of aerosol backscatter on horizontal planes from both RHI volume scans and from LES output were computed for a series of altitudes and ranges. A given isopleth of correlation (a contour line) on a CCF can be plotted and fitted with an ellipse. Any ellipse can be described by three parameters: 1) major axis 2) minor axis and 3) orientation.



Large-eddy Simulation



Correlation functions tend to be aligned with the wind direction near the surface; circular in the middle of the CBL; and perpendicular to the wind direction in the entrainment zone. Comparison of the correlation functions from VIL and LES show that the LES generates substantially smaller eddies than those observed by the VIL.

Comparison of eddy structure

