Cui, Y., Z. Ruan, M. Wei, F. Li, and R. Ge, 2020: Vertical structure and dynamical properties during snow events in middle latitudes of China from observations by the C-band vertically pointing radar. *J. Meteor. Soc. Japan*, **98**, 527-550.
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Plain Language Summary: The 4 shallow snow events (echo top <8 km) and 2 deep events (>10 km) were observed by the C-band vertically pointing radar with frequency modulation continuous wave technology (CVPR-FMCW). The snow clouds were divided into generating cell (GC) and stratiform (St) regions. The fall streaks (FSs) associated with GCs were embedded in the St regions. The vertical air velocity (W_a) and reflectivity-weighted particle fall speed (V_z) values were retrieved more precisely using bimodal Doppler spectra. The characteristics of GC regions, as well as the average reflectivity gradients and dynamical properties inside and outside GCs and FSs were quantified.

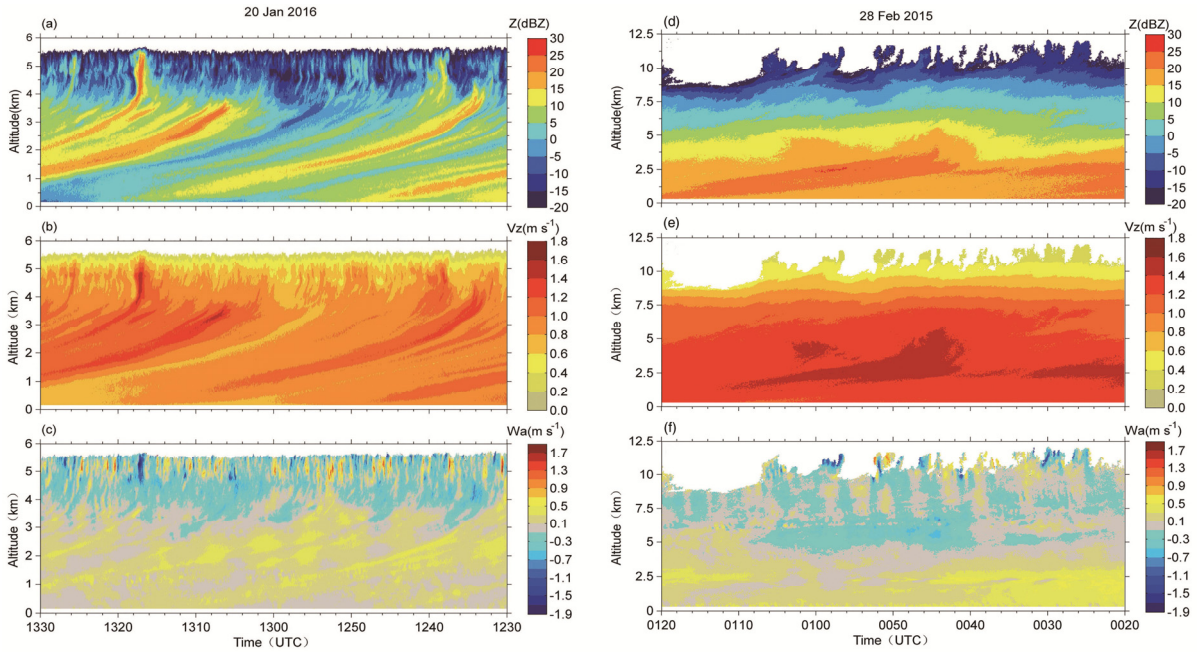

Figure 1. Analysis of the dynamical properties from 1230 to 1330 UTC on 20 Jan 2016; (a) Z, (b) V_z (positive is downward), (c) W_a (positive is downward); and analysis of the dynamical properties from 0020 to 0120 UTC on 28 Feb 2015; (d) Z, (e) V_z (positive is downward), and (f) W_a (positive is downward). If the speeds are between −0.1 and 0.1 m s^{-1}, the vertical air motions were considered to be negligible (grey areas in the Figs. 1c and 1f).

- The 6 snow events were classified into deep and shallow categories and the snow clouds were divided into GC regions and St regions for statistical comparison.
- The W_a and V_z values were retrieved more precisely using bimodal spectra from CVPR-FMCW. The vertical structure and continuous evolution of W_a and V_z in the snow clouds were also exhibited more clearly.
- The characteristics of GC regions, as well as the average reflectivity gradients and dynamical properties inside and outside GCs and FSs were quantified, improving the understanding of the differences between the inside and outside of GCs and FSs during the 2 types of snow events in terms of vertical reflectivity gradients and dynamical properties.