

Interactive comment on “High-Range Resolution Spectral Analysis of Precipitation Through Range Imaging of the Chung-Li VHF Radar” by Shih-Chiao Tsai et al.

Anonymous Referee #1

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Review on “High-range resolution spectral analysis of precipitation through range imaging of the Chung-Li VHF radar” by Tsai et al. General comments: Authors discuss the implementation of RIM analysis on precipitation spectra collected with Chung-Li VHF radar. They highlighted the need for point-by-point correction of range delay to ensure the continuity of power spectra at gate boundaries. They also compared two RIM methods, i.e., Capon and Fourier. The paper is, in general, well written and easy to understand. On the flip side, the technique discussed in the paper is not completely new. Even the authors have used it in their earlier studies (for understanding a different region of the atmosphere). What is new is its implementation on precipitation spectra at VHF frequencies. I, therefore, recommend the paper for publication after a moderate

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revision. Specific comments: The paper discusses the implementation of RIM on clear-air and precipitation echoes from VHF spectra collected during precipitation. There is no mention about how they segregate these echoes. At times, it is very difficult to segregate them. L218, Why the analysis is restricted to 3.5 km and below. Though authors mention about the effects of radar bright band, it is not clear why to confine only to lower heights. The technique should work at all heights. The authors should highlight clearly what is new in this manuscript. P2, After L61, Include the work of Gan et al. (2015), Radio Sci. Minor comments: L 21, precipitations -> precipitation L 26, turbulences -> turbulence L32, Include Rao et al. (1999), Radio Sci. L40, should be “, which facilitates the investigation of Kelvin-Helmholtz. . . .” L64, should be “. . . .collected during 21-23 August 2013” L115, should be “. . .which is 31 in this study. . .” L117, remove ‘an’ between ‘and’ and ‘thus’ L184, I presume what authors meant was the improvement in continuity not the feature of discontinuity. Please correct the sentence. L253, should be “. . . VSTD150 (left panels). . .” L307, should be “. . .spectral width. . .” L314, should be “. . .objective.” Caption of Fig. 4 doesn’t match with figures. Needs to be corrected.

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