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Comment on angeo-2022-7

Anonymous Referee #1

Referee comment on "Classification of spectral fine structures of Saturn kilometric radiation" by Georg Fischer et al., Ann. Geophys. Discuss.,
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Classification of spectral fine structures of Saturn kilometric radiation by Fischer et al. is an interesting paper that characterizes the spectral fine structures of Saturn kilometric radiation (SKR) observed by the Wideband Receiver of the Cassini's Radio and Plasma Wave Science instrument. The authors introduce seven different classes of SKR fine structures 1)dots (one class for 0-dimensional objects), 2-5) lines (1-dimensional objects being horizontal, vertical, or with negative or positive slope), 6)areal features (2-dimensional objects), 7)special structures named according to their appearance in time-frequency spectra (rain, striations, worms, and caterpillar). The authors define the various characteristic (for example the frequency width and slope, and emission duration) for each classification. The authors then examine the statistics of the occurrence of the various classes and sub-classes and their characteristics and discuss the implications in view of the many theories about spectral fine structures of auroral radio emissions.

This paper is well written, the abstract and presentation is clear and understandable, the figures are of high quality and clearly show the data and results, and the references are comprehensive.

The paper is primarily an observational work (characterizing the spectral structure of the SKR) with some discussion on how the observed structure fits into the various theories of SKR generation and propagation. I rate the scientific contribution as "fairly important" and believe the paper should be published.