

#### James P. Fox<sup>1</sup>, Nicholas Guerra<sup>1</sup>, Michael Molzen<sup>1</sup>, Thomas Pisano<sup>1</sup>, Nathaniel A. Frissell<sup>1</sup>, V. Lynn Harvey<sup>2</sup>, Joseph Klobusicky<sup>1</sup>, Mark Fenner<sup>1</sup> <sup>1</sup>The University of Scranton, Scranton, PA <sup>2</sup>Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder, CO

#### Introduction

- Existing Studies have largely focused on Identifying MSTIDs in the Northern Hemisphere
- This is for a variety of reasons including more consistent ground scatter, more radars, and a better understanding of space weather in the Northern Hemisphere
- Frissell et al. (2016) used frequency analysis to identify periods of high and low MSTID activity in the Northern Hemisphere during the Winter and Spring during daytime hours
- This is done by calculating a MSTID index for each radar over a 2hr window
- The MSTID Index indicates high or low MSTID activity for a given radar over the season based on the integrated power spectral density curve
- The existing code has since been modified to work on Southern Hemisphere Radar Data for all days and times
- These plots show only the top 4 radars within each 2hr period for a given year
- The top plots for a given year represent the MSTID index for Northern Hemisphere radars
- The bottom plots represent the corresponding MSTID index for Southern Hemisphere radars

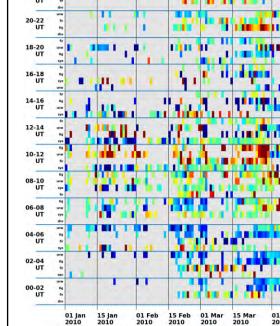


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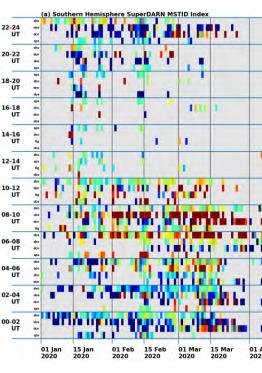
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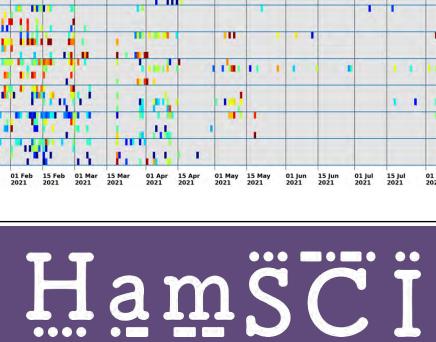
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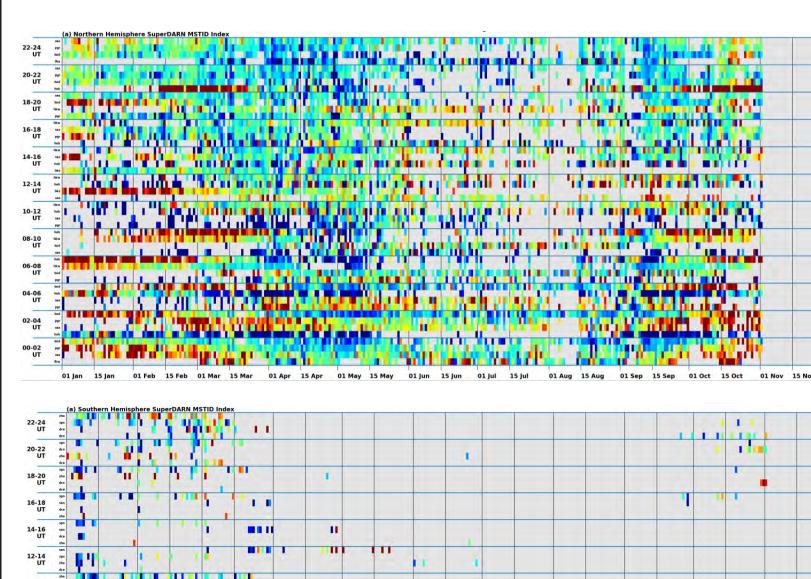
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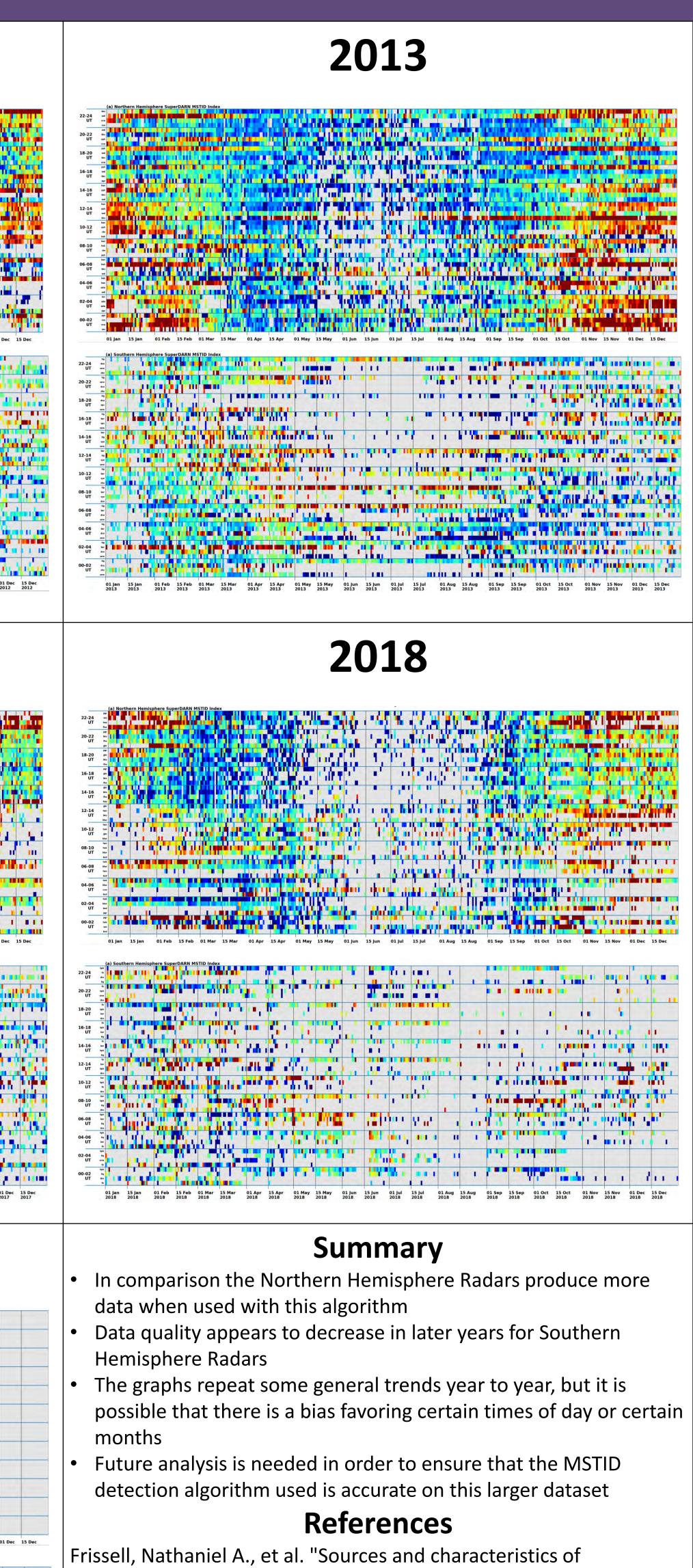


AMATEUR RADIO DIGITAL COMMUNICATIONS

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medium-scale traveling ionospheric disturbances observed by high-frequency radars in the North American sector." Journal of Geophysical Research: Space Physics 121.4 (2016): 3722-3739.

#### Acknowledgements

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## NASA LWS FST 2024

