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Poster
Under the auspices of the Space Weather Research-to-Operations-to-Research (SWR2O2R) program, we are developing a new forecast tool that extends and improves SWPC's D-RAP product for HF absorption during solar proton events. We are pursuing this goal by extending the empirical and presently-operational relations of Sauer and Wilkinson (2008), predicting a square-root dependence of HF absorption on GOES proton flux, using a vertically-resolved model with D-Region chemistry. In a recent publication (in review), we demonstrate that this
new approach has greater predictive accuracy than D-RAP for the September, 2017 solar proton event. In addition, our new approach shares analytic similarities to D-RAP. Under certain conditions, for example proton absorption confined to the upper D-Region, our approach also predicts a similar square-root dependence in the quasi-steady limit. However, our vertically-resolved models allows for generalized weighting factors for the contribution of separate GOES proton energy channels to total HF absorption. In this poster, we summarize the current status of our new model, and our plans for validation using a large set of storms observed by the Canadian Riometer Array.

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