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The effects of SDO-EVE measurements on ionospheric modeling

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Errors associated with ionosphere-thermosphere modeling can be attributed to a number of factors. Very often, they are caused by incomplete information regarding the forcings acting on the system. Empirical statistical models and proxies are used to compensate by making use of correlations between available measurements and quantities of interest. One such measurement, F10.7 index often serves as a proxy for Extreme Ultra Violet photon fluxes. While this approach has worked remarkably well, data from the Solar Dynamics Observatory mission allows us to improve the forcings and the model results. In this study, we investigate several alternatives to the F10 approach. We make use of SDO data and the Solar Radiation Physical Model, as well as TIMED-SEE. The effect on model results is presented and discussed, with the SDO / SRPM combination resulting in the greatest increase in model performance.