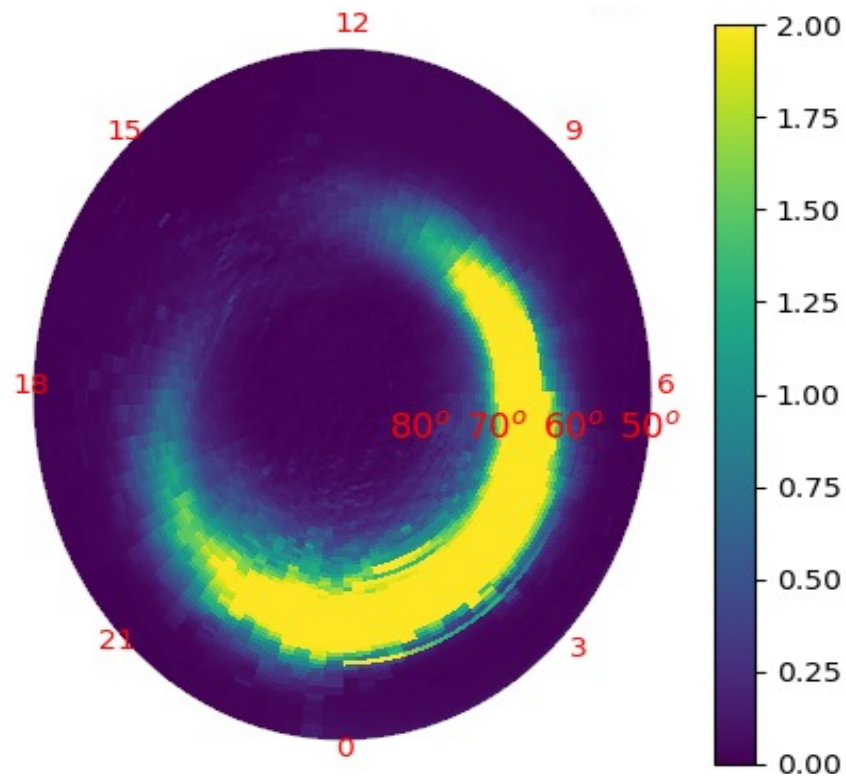# Ovation Pyme

Ovation Prime (2010) in Python

Liam Kilcommons

University of Colorado, Colorado Center for Astrodynamics Research **(CCAR)**,
Department of Aerospace Engineering Sciences **(AES)**

OvationPyme Diffuse Auroral Energy Flux [mW/m^2]
<-------

What is Ovation Prime?

- Model of high latitude electron precipitation made using DMSP SSJ data

- Total energy flux, number flux, average electron energy for three types of electron precipitation & proton precipitation

- Driven by solar wind coupling function based on NASA Omniweb data

Ovation Prime 2010 (NOAA Version)

https://sourceforge.net/projects/ovation-prime/

- Parent of Ovation Pyme

- Written in IDL

- See this paper for details on performance

Machol, J. L., J. C. Green, R. J. Redmon, R. A. Viereck, and P. T. Newell (2012), Evaluation of OVATION Prime as a forecast model for visible aurorae, Space Weather, 10, S03005, doi:10.1029/2011SW000746.

Ovation Pyme is a direct rewrite of the NOAA IDL code in Python, with a few extra features

- There are other versions of Ovation:
  – JHU APL's Ovations (2010, SM, 2013)
  – 2013 is better than 2010 for strong storm-time

Extra Feature: Ionospheric Conductance

OvationPyme Conductance Output N Hemisphere at Wed 30 Nov 2011 12:10:00 PM
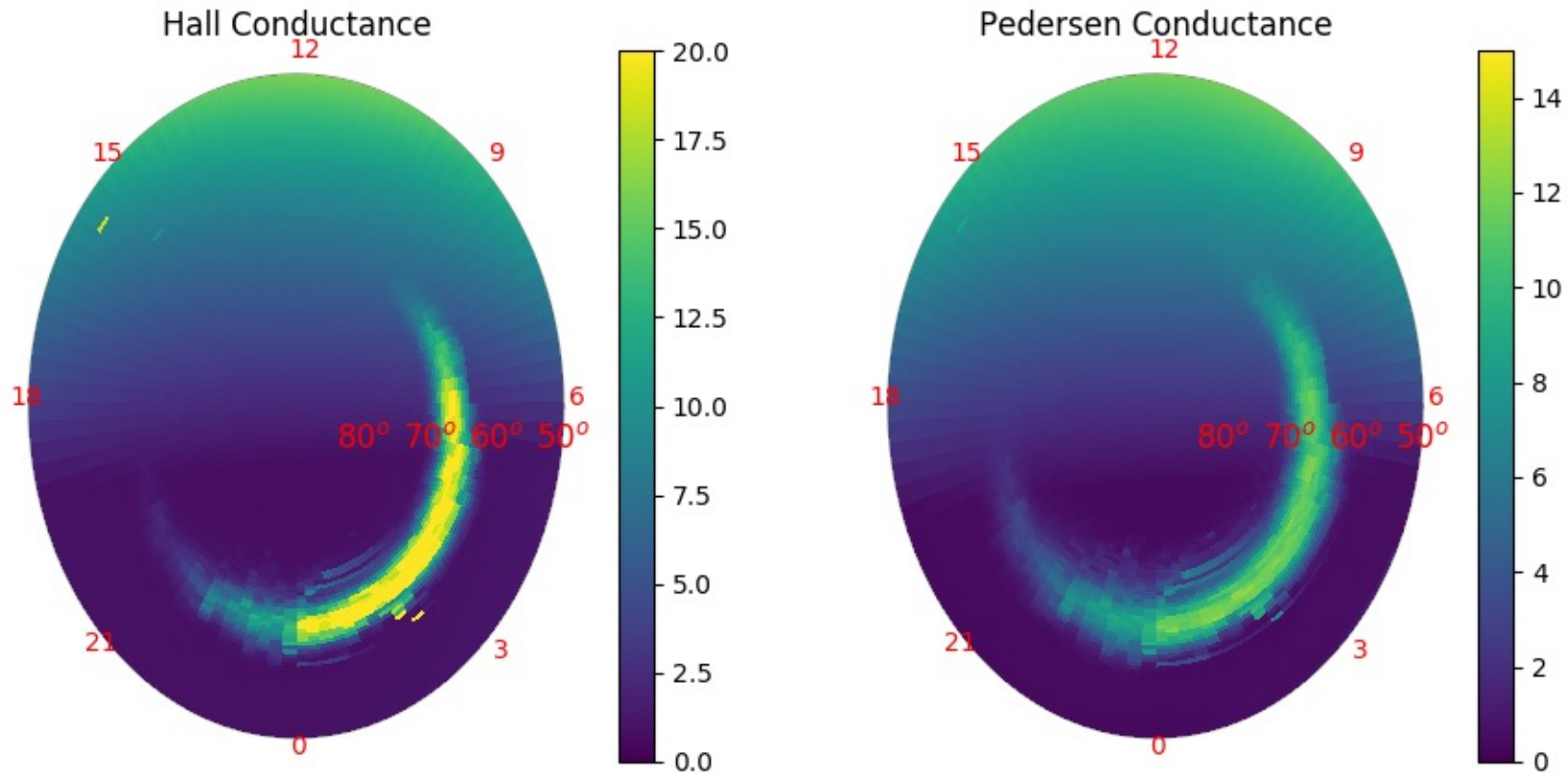
Empirical Model for Solar Conductance (Brekke & Moen)

Robinson Formula For Auroral Conductance

Thanks!

https://github.com/lkilcommons/OvationPyme

Contributions, bug reports, and comments are very welcome!