**A software for loading binary files with the DMSP mission SSJ/4 sensor data**

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The DMSP mission provided a valuable set of observations for precipitating electrons characteristics. Many mature and contemporary models adopted these data to formulate a statistical description of precipitating electron number and energy fluxes as a function of magnetic coordinates and a space weather state characterized by a few observed parameters.

Nowadays, the DMSP observations are routinely updated and published on the NOAA (National Oceanic and Atmospheric Administration) website at https://bit.ly/dmsp-data. It provides data as graphical images (pdf- and png-files), digital files in CDF format, and SSJ/4 sensors binary files. The latest DMSP mission satellites are equipped with SSJ/5 sensors but continue to use the SSJ/4 binary file format to gain backward compatibility. Graphical images are convenient for the visual exploration of observations. CDF files contain the final post-processed data. Binary files are raw dumps of the SSJ/4 telemetry data. However, a large part of observations is published as binary files only, but NOAA published no tools to deal with such type of data.

Due to this, we developed pydmsp – a Python3 package to load SSJ/4 binary files accounting for its Big Endian architecture (dump storing conventions). This package loads an entire file into a random access memory (RAM) of a computer. The package takes gzipped or non-compressed files as input and returns results in following three formats: (a) a binary sequence of bytes, (b) an object of type 'xarray.Dataset' holding the raw counts of the sensor, and (c) xarray.Dataset object holding values converted into physical units.

Here we discuss the principal features and limitations of the developed pydmsp (https://pypi.org/project/pydmsp/) package.