Geophysical Research Abstracts Vol. 20, EGU2018-18390-1, 2018 EGU General Assembly 2018 © Author(s) 2018. CC Attribution 4.0 license.



## **Evolution of CME Mass in The Corona**

Russell A. Howard (1) and Angelos Vourlidas (2,3)

(1) U.S. Naval Research Laboratory, Space Science Division, United States (russ.howard@nrl.navy.mil), (2) Johns Hopkins University Applied Physics Laboratory, Laurel, MD 20723, (3) IAASARS, Observatory of Athens, Penteli, Greece

The idea that Coronal Mass Ejections (CMEs) pile up mass in their transport through the corona and heliosphere is widely accepted. However, it has not been shown that this is the case. We perform an initial study of the volume electron density of the fronts of thirteen 3-part CMEs with well defined frontal boundaries observed with the SOHO/LASCO white light coronagraphs. We find that, in all cases, the volume electron density decreases as the CMEs travel through the LASCO/C2 & C3 fields of view, from 2.6 - 30 Rs. The density decrease follows closely a power law with an exponent of -3, which is consistent with a simple radial expansion. This indicates that in this height regime there is no observed pileup.

This work was supported by NASA.