**Automatic Event Detection and Characterization of solar events with IRIS, SDO/AIA and Hi-C**

Caroline Alexander¹, Brian Fayock², Amy Winebarger³

¹ NASA’s Marshall Space Flight Center, Huntsville, Alabama
² Center for Space Plasma and Aeronomic Research, Science Department, University of Alabama in Huntsville

**Background**

The Interface Region Imaging Spectrograph (IRIS), launched in the summer of 2013, is designed specifically to observe and investigate the transition region and adjacent layers of the solar atmosphere, obtaining images with high spatial, temporal, and spectral resolution.

One particular work is focused on the resolution of inter-moss loops, which have been detected in the lower corona by the Atmospheric Imaging Assembly (AIA) and the High Resolution Coronal Imager (Hi-C).

**Conclusions**

The progress of this work is currently involved in the automatic characterization of groups and how comparisons between these four data sets can lead to an interpretation of the local state of ionization. The automatic characterization will need to include a variety of special cases given the complex nature of all structures seen in the four data sets. This is one of the criteria that would allow us to characterize the level of ionization. If ionized, we looked for examples of the data sets.

This work is funded by a cooperative agreement between the NASA Marshall Space Flight Center and the Center for Space Plasma and Aeronomic Research at the University of Alabama in Huntsville.

---

**Grouping Demonstration**

The process shows the first pixel (red) is selected, and the red square is placed around the pixel to highlight it. The next pixel is chosen by a simple line of the first two pixels. The process continues until the entire data cube is scanned. If a new pixel is added to the collection for another 2D frame, the process is repeated until the entire event is detected.

---

**Light Curve Analysis, Event Detection, and Comparison Between IRIS SJ1400, AIA 171, AIA 193, and AIA 211**

The first pixel is chosen by a simple line of the first two pixels. The process continues until the entire data cube is scanned. If a new pixel is added to the collection for another 2D frame, the process is repeated until the entire event is detected.