



## **Properties of the Aurora as seen by FAST**

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During 10 years of operation the FAST satellite has both refined what was known previously about the large scale properties of the auroral acceleration region and revealed new properties that were either rarely identified or previously unknown. These phenomena are generally organized by the nature of the associated field-aligned current systems into three regions: "upward current", "downward current", and "Alfvenic" or fluctuating current. The upward/downward current regions are both associated with "U-shaped" potential structures and relatively steady electron and ion beams either entering or leaving the ionosphere, and ion conics. The wave activity associated with these regions typically include electron "solitary waves", ion cyclotron waves, AKR, and VLF "saucers". The "Alfvenic" region maps to likely magnetic reconnection regions. Obtaining many of these results required the the high energy/angle resolution and sampling speed of the FAST instrumentation.