Geophysical Research Abstracts, Vol. 8, 03738, 2006 SRef-ID: 1607-7962/gra/EGU06-A-03738 © European Geosciences Union 2006



## **Characteristics of Electron Holes in the Upward Auroral Current Region**

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We present evidence for electron holes in the upward current auroral kilometric radiation (AKR) source region based on high time resolution data from the FAST spacecraft. The characteristics of these holes are quite different from those previously reported in other parts of the magnetosphere. They are created by a beam plasma interaction upstream of a strong double layer via a kinetic Buneman instability and are associated with slowly moving tripolar isolated electric field structures. Such structures are the signature of a train of nested ion and electron holes. Their associated parallel electric fields can reach 1V/m peak to peak and appear to modulate both the electron and ion energy fluxes. Close inspection of the AKR spectrum reveals that that it consists of a large number of narrow band "elementary radiation sources" that move across the spectrum at drift velocities of ~ 100 km/s. Interpreting these velocities as velocities in real space along the magnetic field, one concludes that these sources are the signatures of electron Debye scale radiators of size expected for electron holes