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Searching for evidence of convective cells within Earth's magnetotail<sup>1</sup> MICAH WEBERG, ROBERT BRUNTZ, UT Arlington, RAMON LOPEZ — The solar wind flows continually out from the sun, carrying energy and momentum in its stream of plasma, and shaping the Earth's magnetosphere. The magnetosphere is defined as the region of space dominated by the Earth's magnetic field. Viscous interactions have been suggested as one of the ways momentum and energy can be transferred from the solar wind, across a boundary called the magnetopause, and into the magnetosphere. Current models indicate that this phenomenon should cause a cell of circulating plasma to form just inside the magnetopause. This flow pattern, sometimes likened to a convection cell, produces an electric potential which is transmitted along magnetic field lines into the ionosphere near the polar cap. Using data from the THEMIS satellites, we will explore the motion of plasma near the magnetopause within the magnetotail to look for evidence of these "convective cells." We will compare some THEMIS observations to our expectations of convective cells and discuss some implications it may have for ionospheric physics.

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