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Highlight of new results from Institutional Computing Projects

William Daughton

April 29, 2013

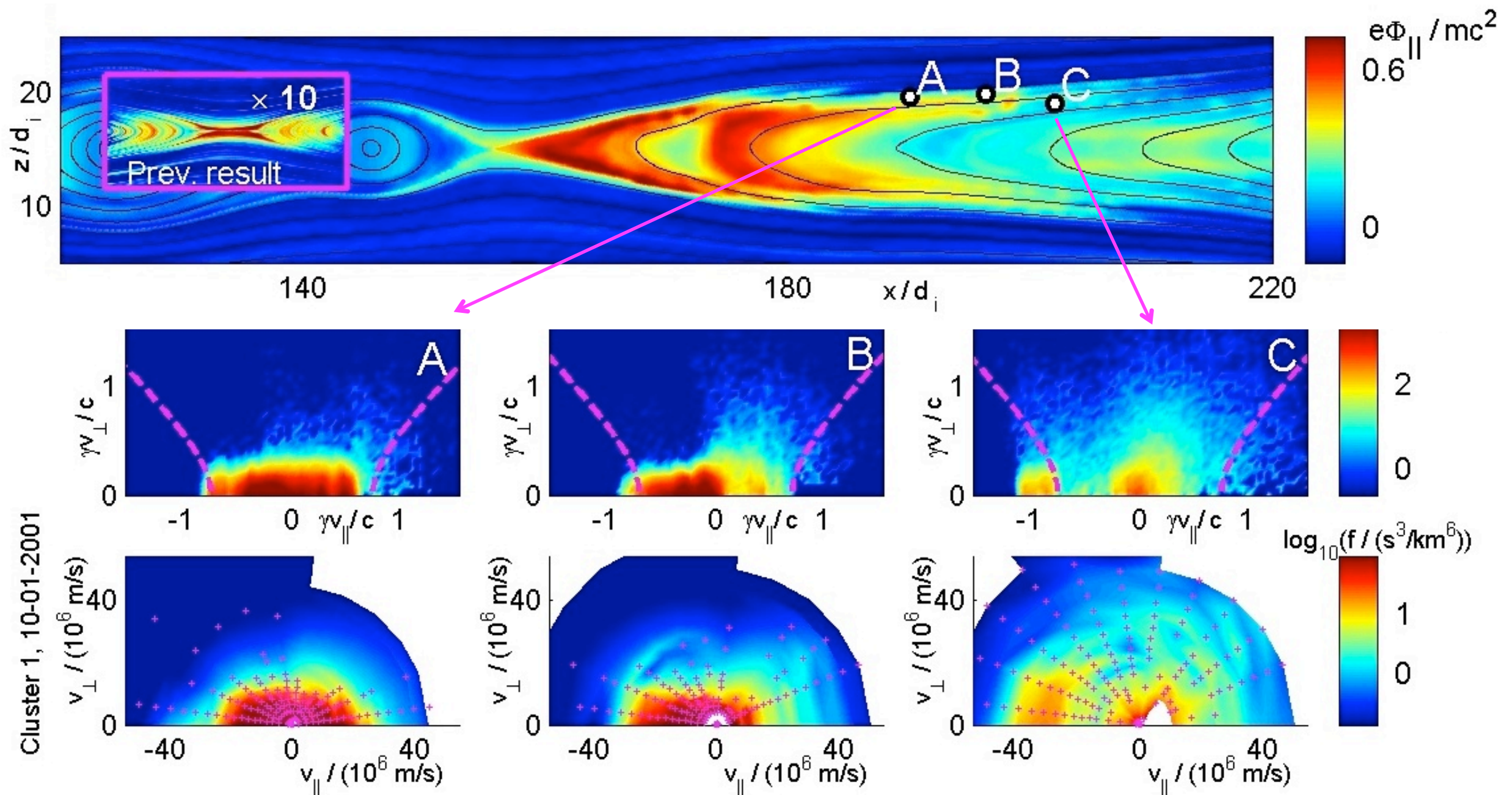
W I I _ShearTurb

2012- 2013

Role of parallel electric fields in accelerating electrons in the Earth's magnetotail

Kinetic simulations reveal new acceleration mechanism
which is consistent with spacecraft observations

Egedal, Daughton, Le,
Nature Physics, 2012



WII_MagReconn

2011-2012

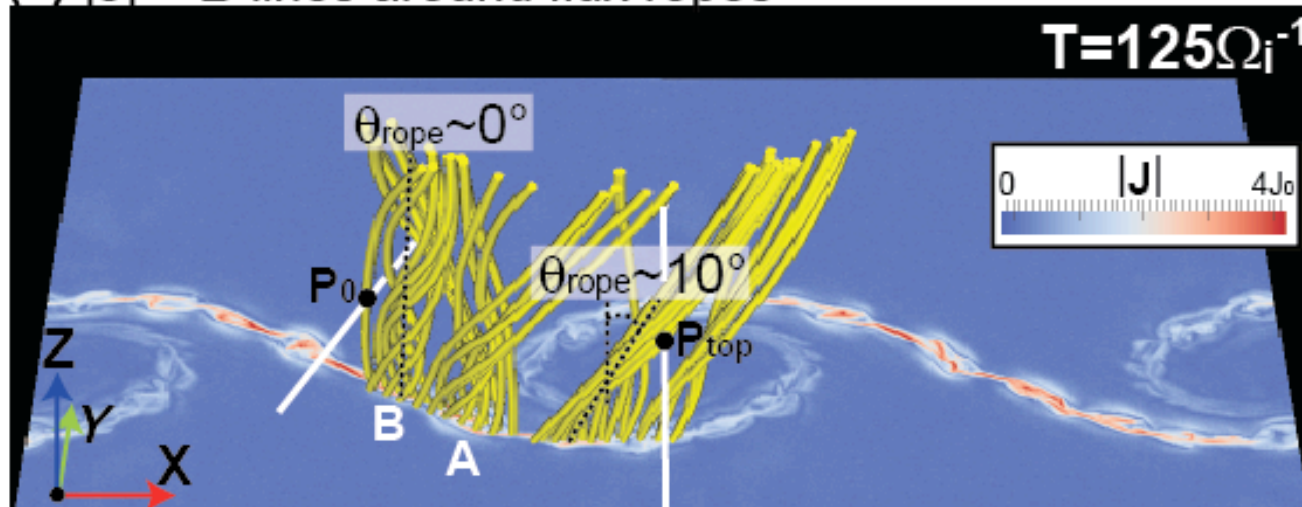
Vortex-Induced Magnetic Reconnection at the Earth's magnetopause boundary layer

Large-scale kinetic simulations offer new insights into 3D evolution of the Kelvin-Helmholtz instability

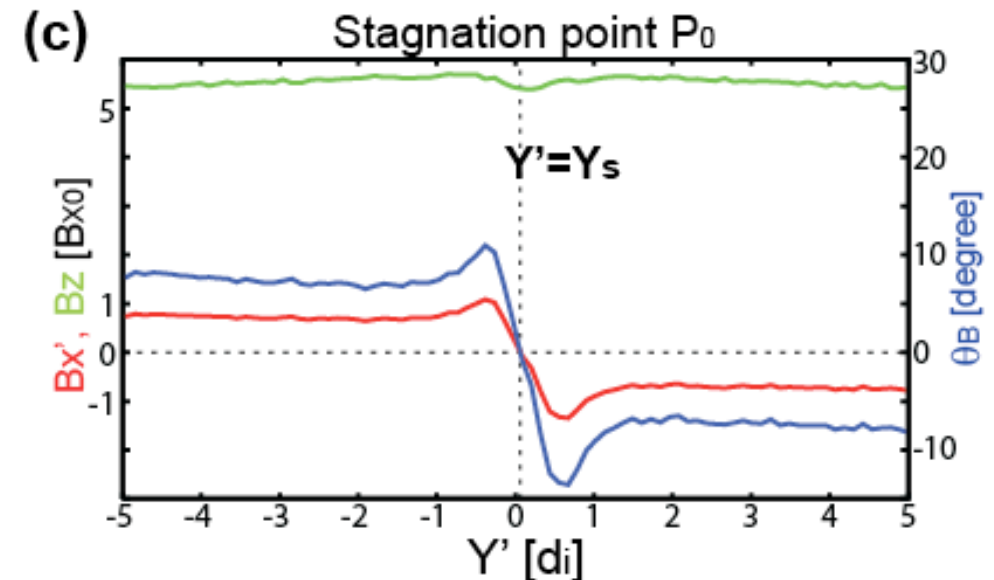


Nakamura, Daughton, Karimabadi & Eriksson, J. Geophys. Res., 2013

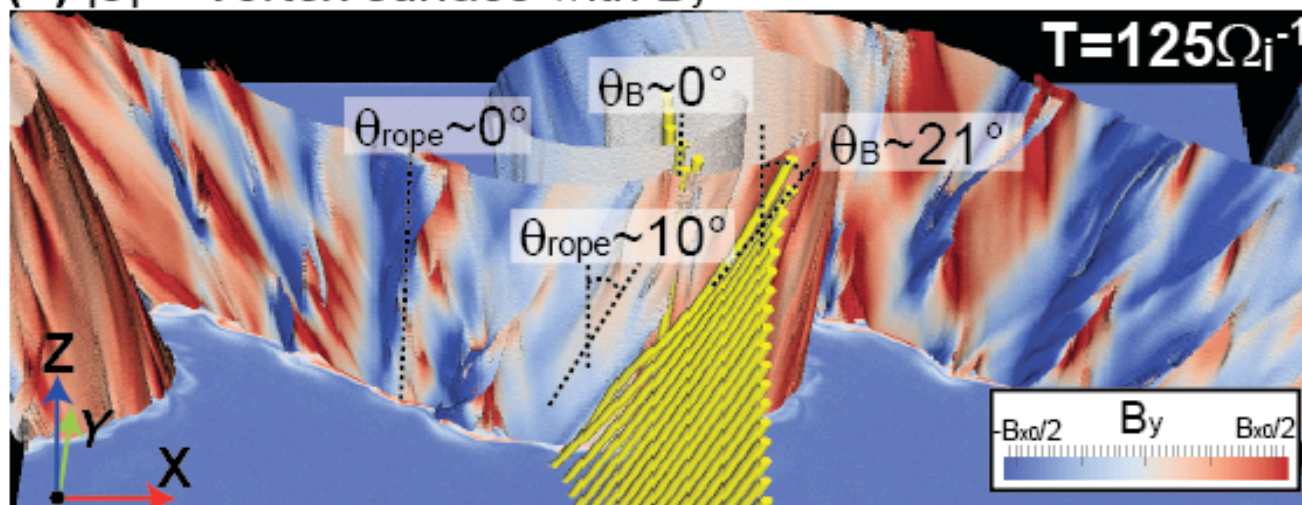
(a) $|\mathbf{J}| + \mathbf{B}$ lines around flux ropes



(c)



(b) $|\mathbf{J}| + \text{Vortex surface with } B_y$



(d)

