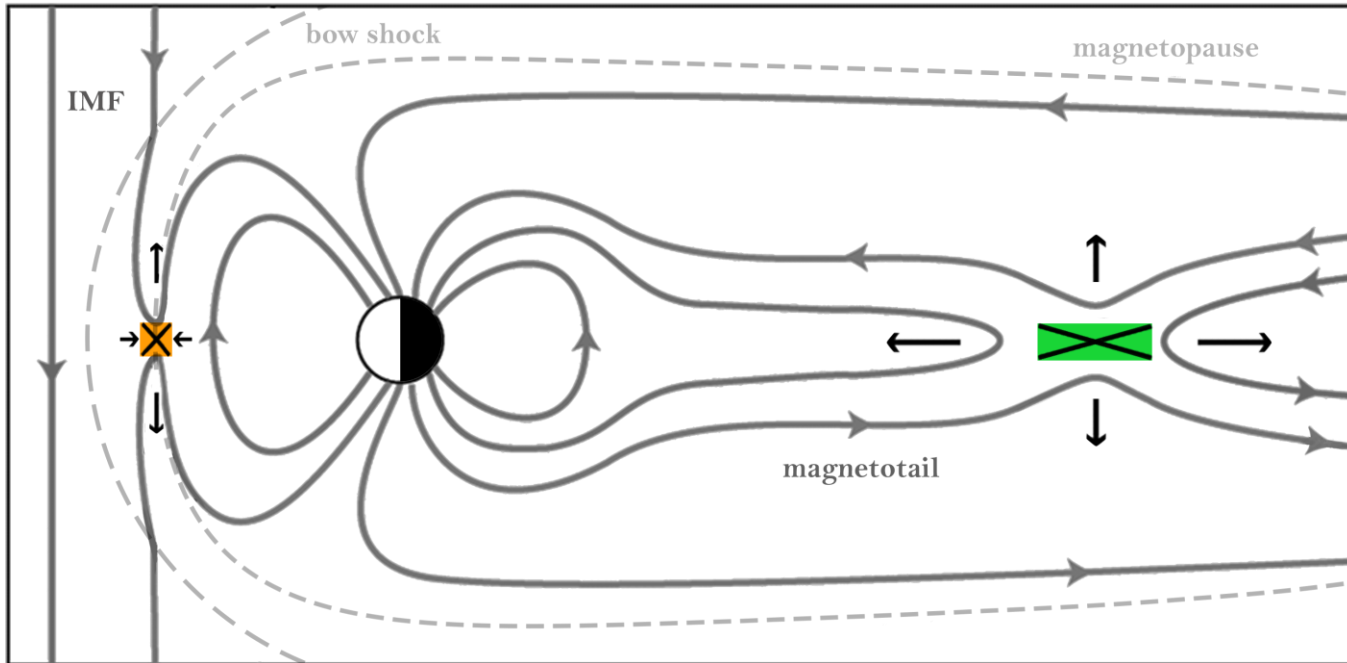


The role of ionospheric convection in shaping the auroral oval

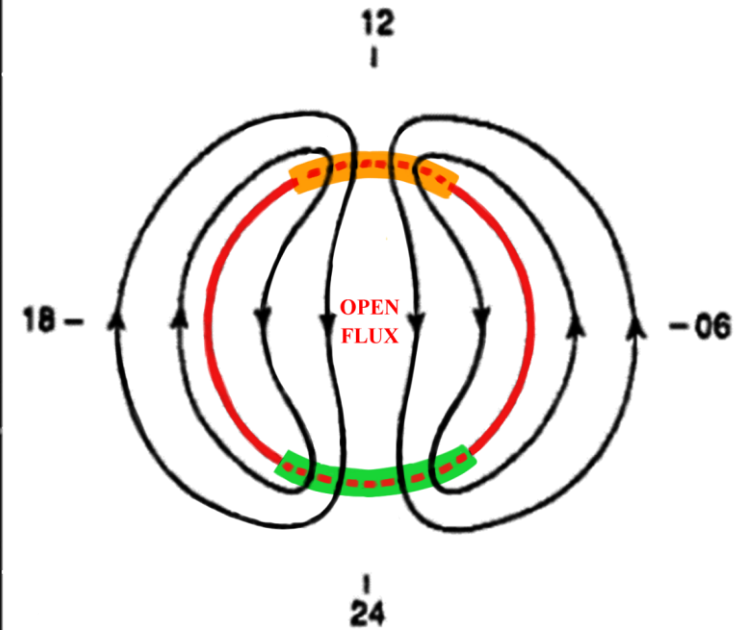
Main Author: Sara Gasparini¹

Co-Authors: Karl Laundal¹, Jone Reistad¹, Spencer Hatch¹,
Anders Ohma¹, Simon Walker¹

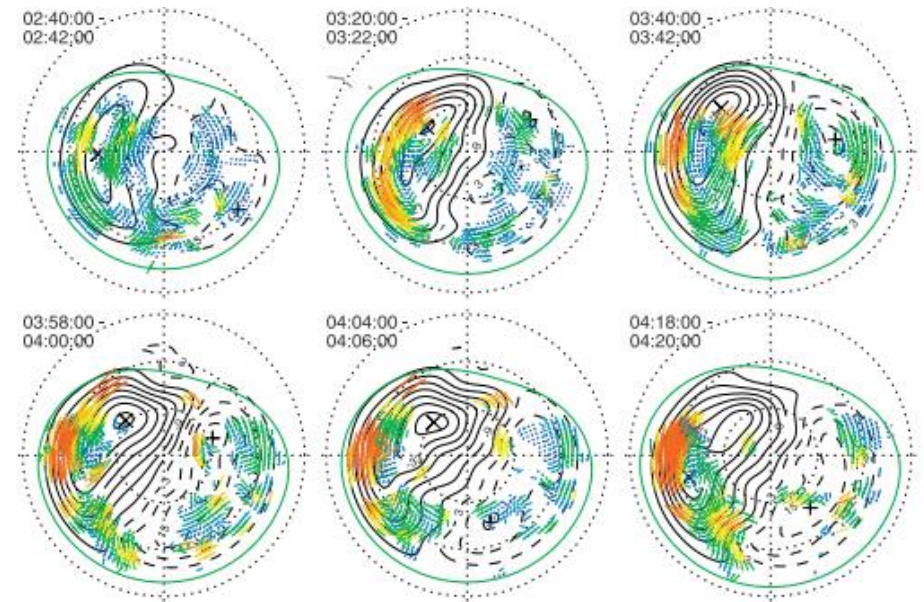
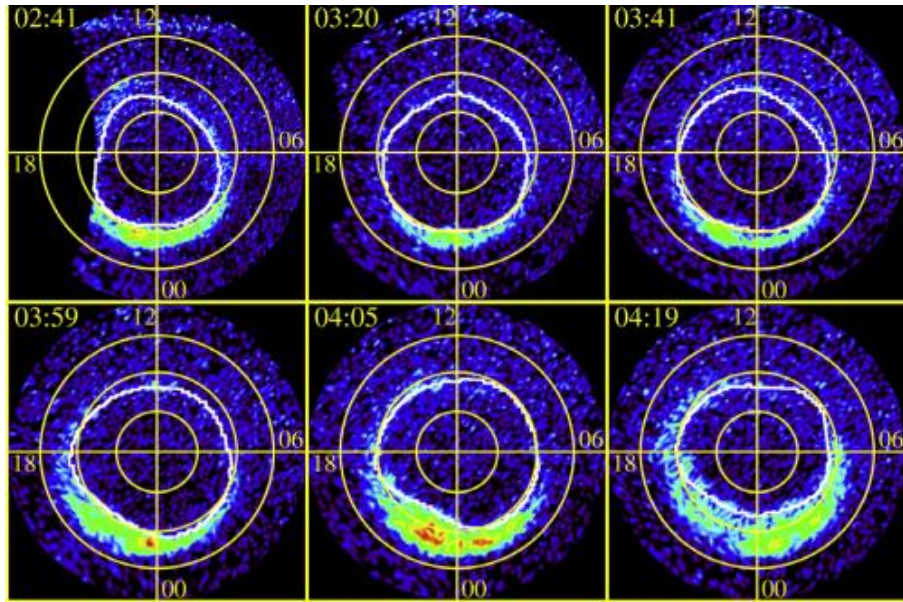
¹ Birkeland Centre for Space Science, University of Bergen, Norway



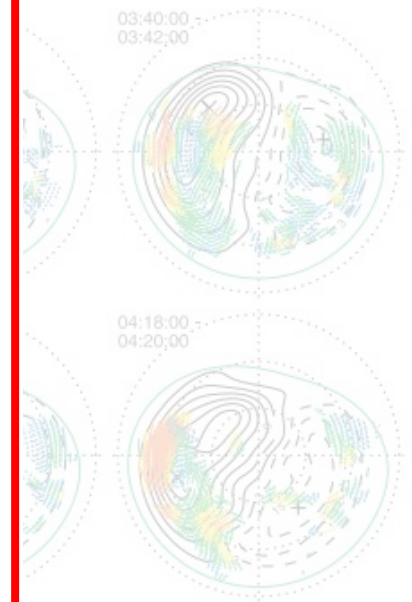
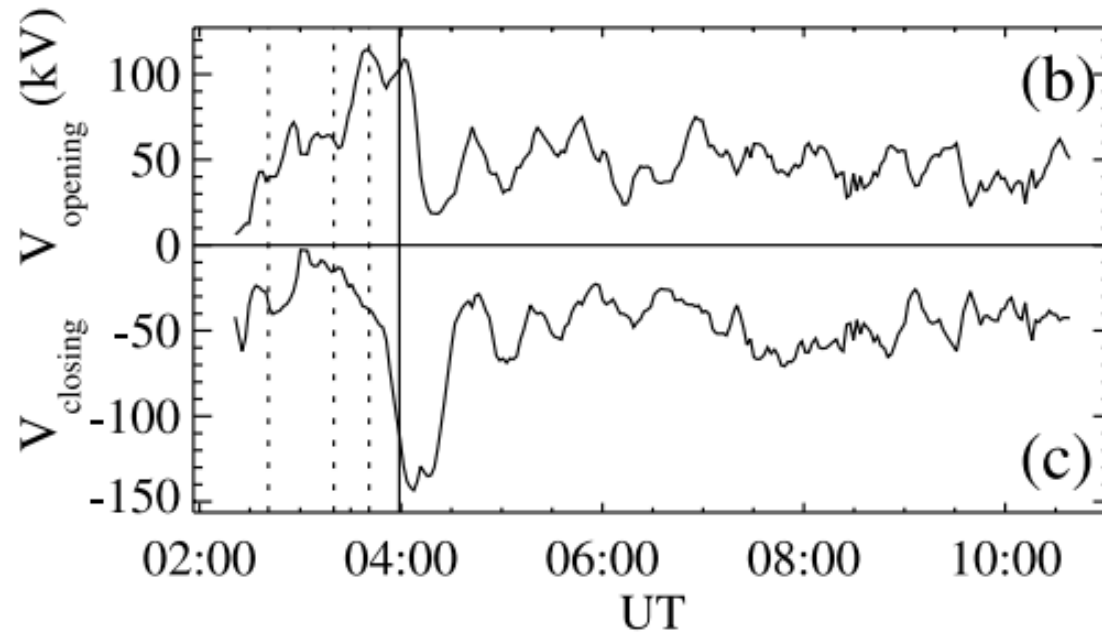
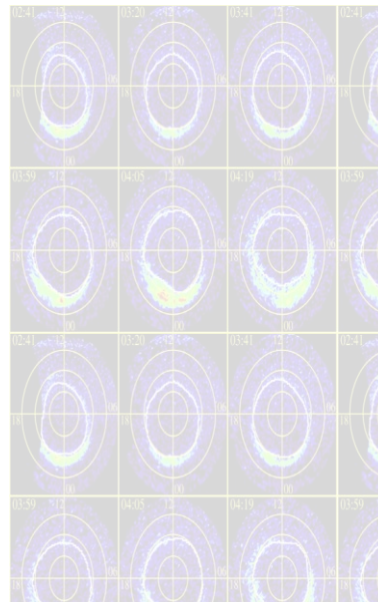
Adapted from Eastwood et al. 2017



Adapted from Cowley
and Lockwood 1992



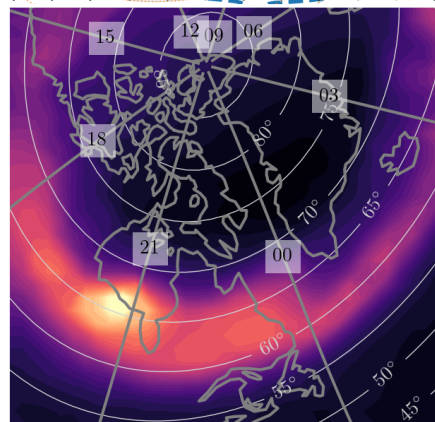
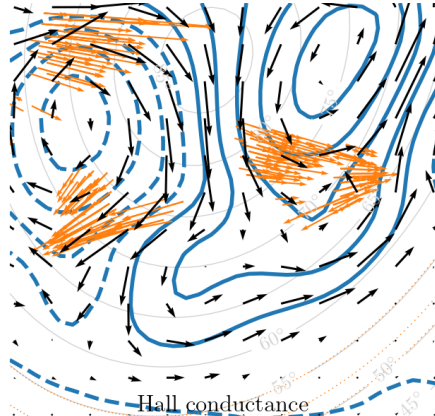
[Hubert et al. 2006](#)



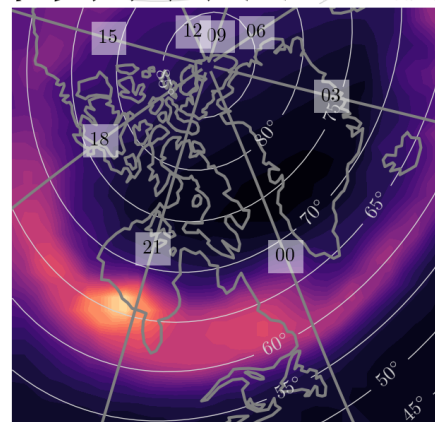
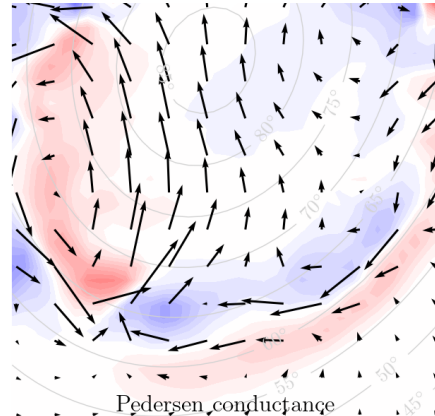
[Hubert et al. 2006](#)

Ionospheric convection patterns using a new data assimilation technique - LOMPE

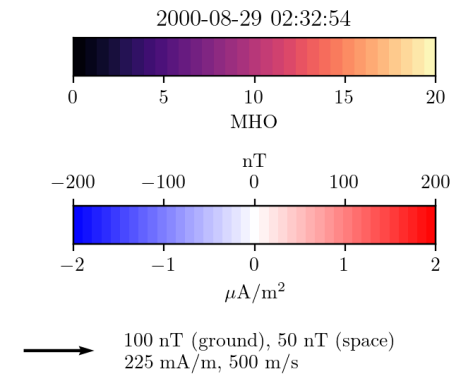
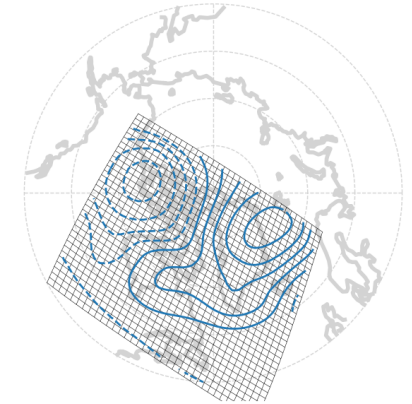
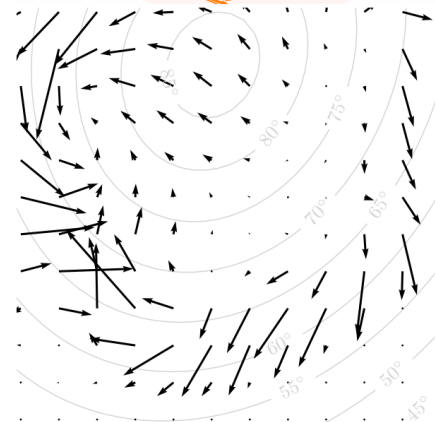
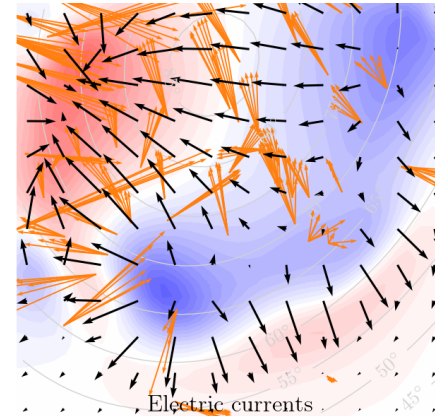
Convection velocity and electric potential



FAC and magnetic field

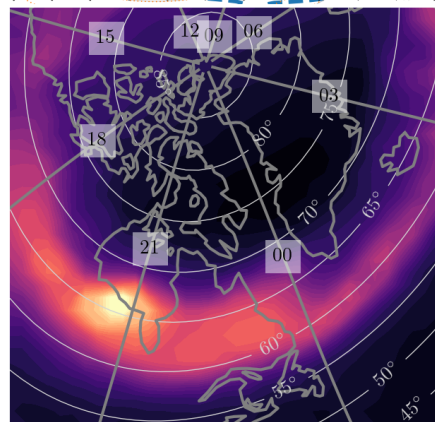
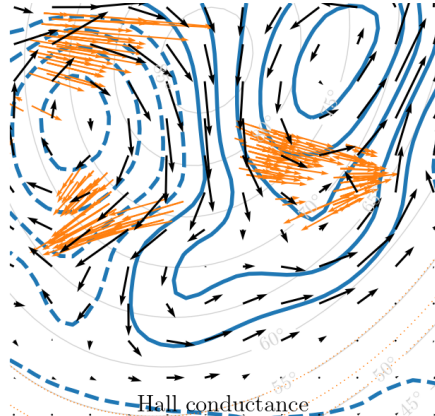


Ground magnetic field

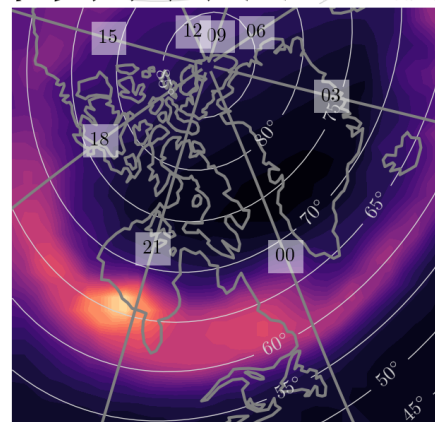
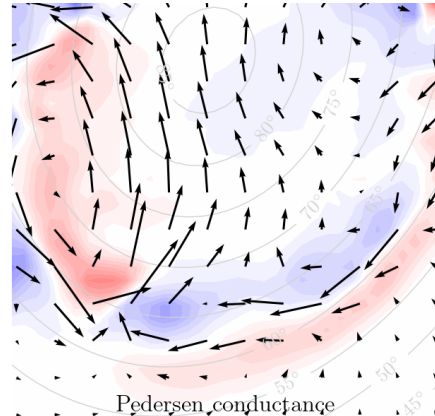


Ionospheric convection patterns using a new data assimilation technique - LOMPE

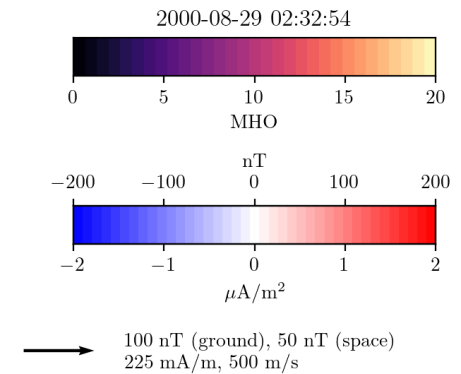
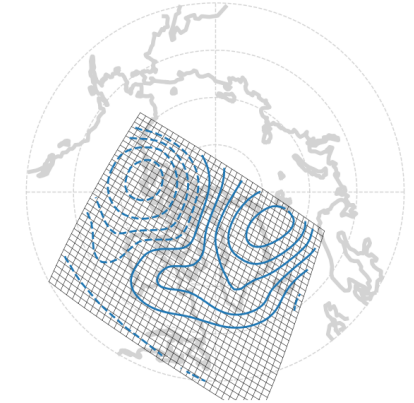
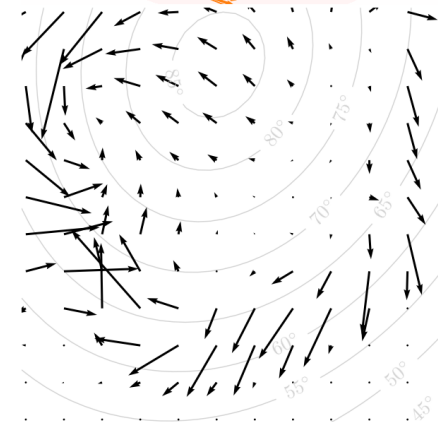
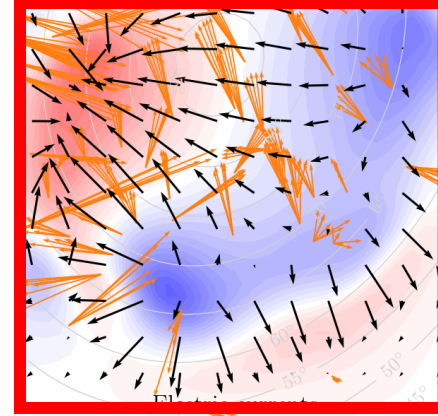
Convection velocity and electric potential



FAC and magnetic field

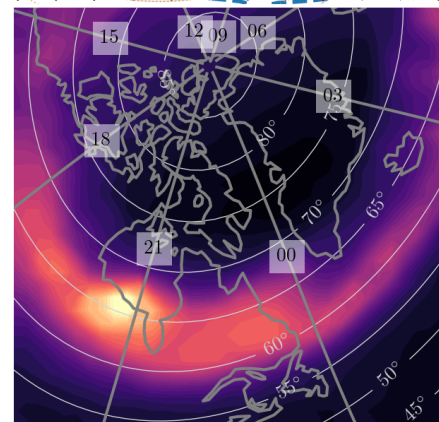
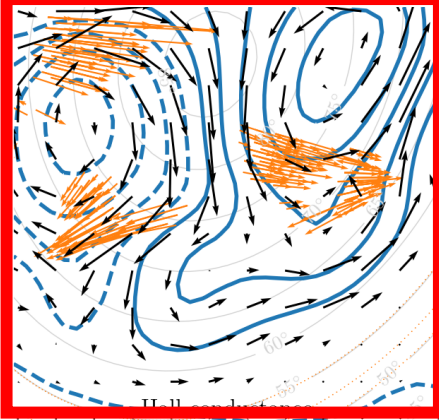


Ground magnetic field

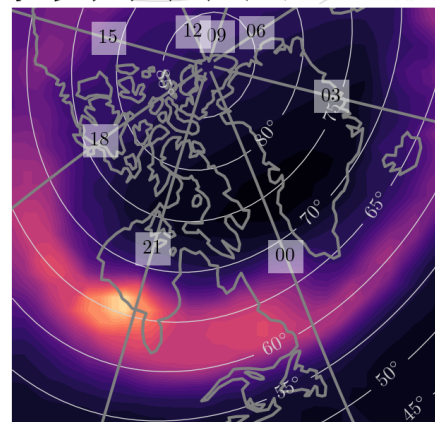
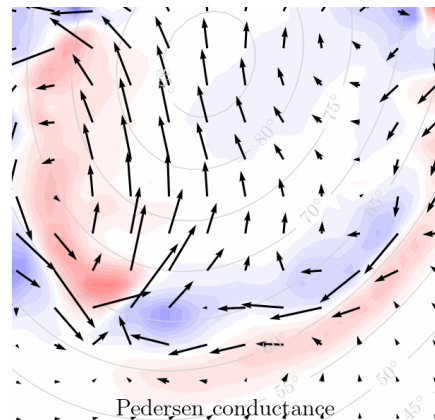


Ionospheric convection patterns using a new data assimilation technique - LOMPE

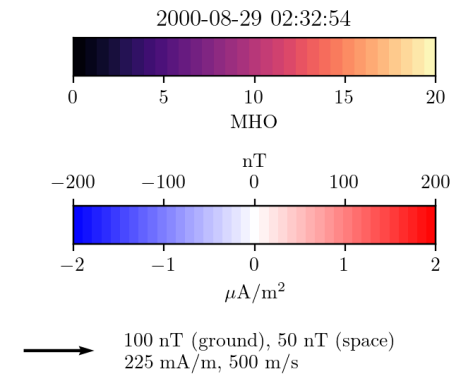
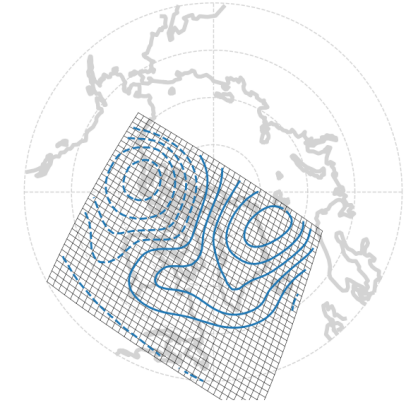
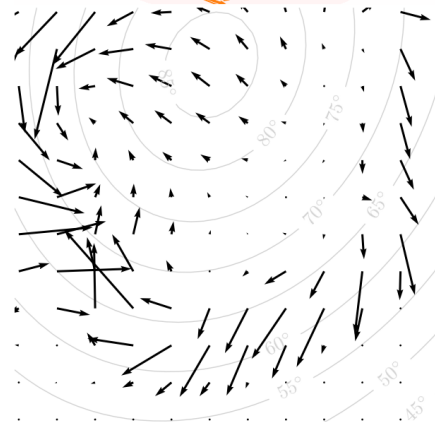
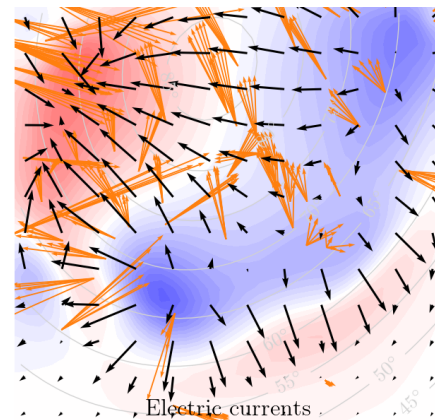
Convection velocity and electric potential



FAC and magnetic field

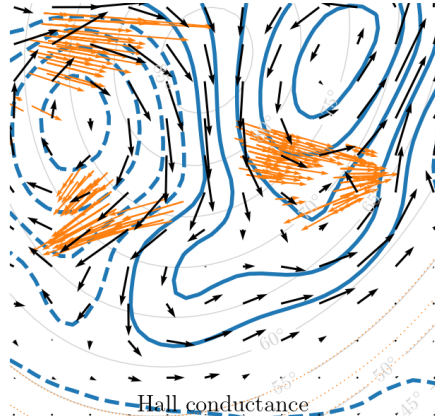


Ground magnetic field

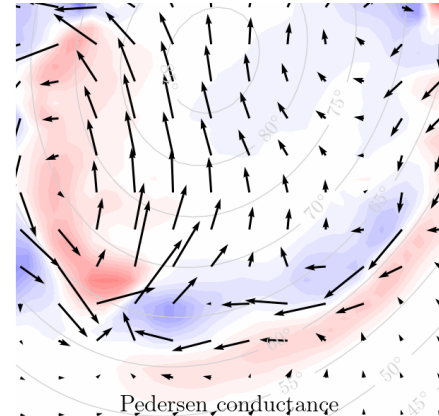


Ionospheric convection patterns using a new data assimilation technique - LOMPE

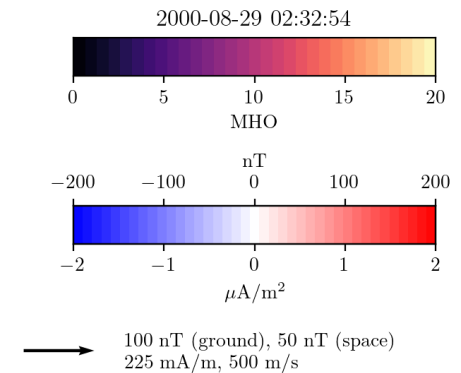
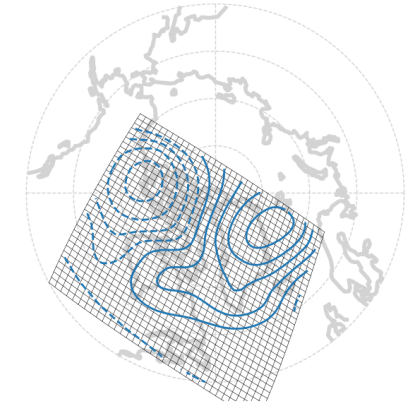
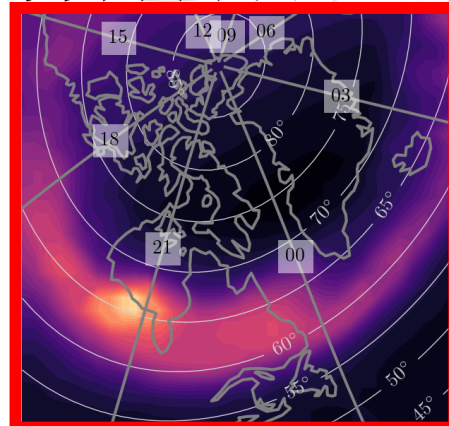
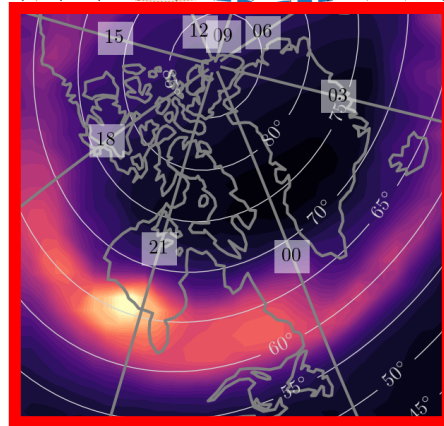
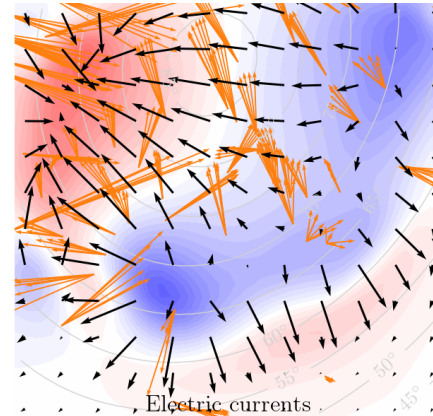
Convection velocity and electric potential



FAC and magnetic field

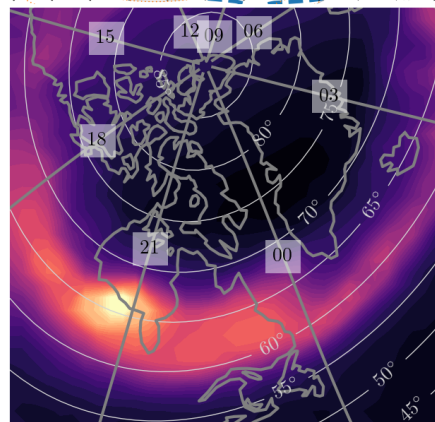
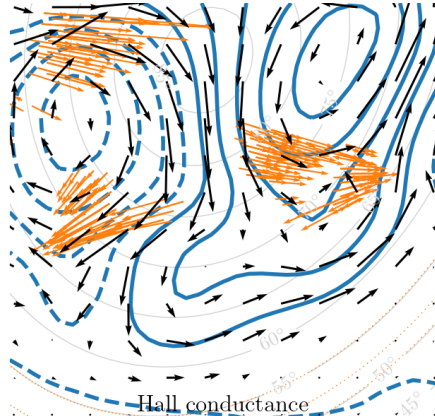


Ground magnetic field

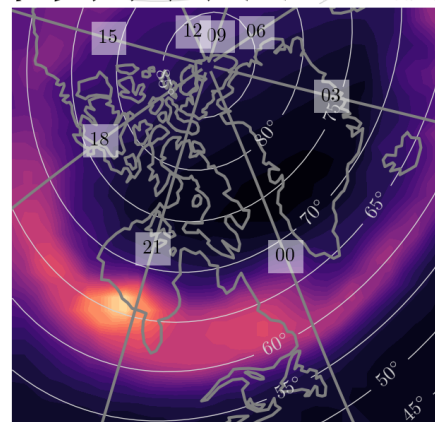
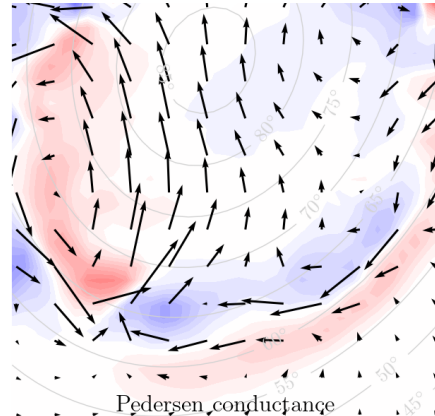


Ionospheric convection patterns using a new data assimilation technique - LOMPE

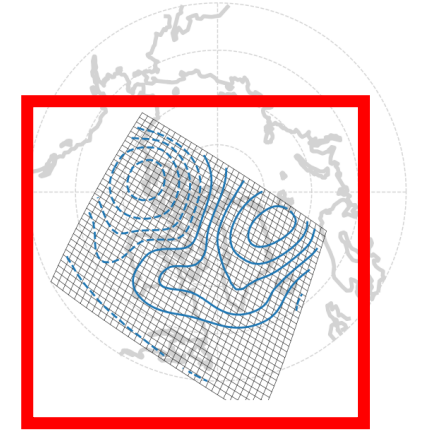
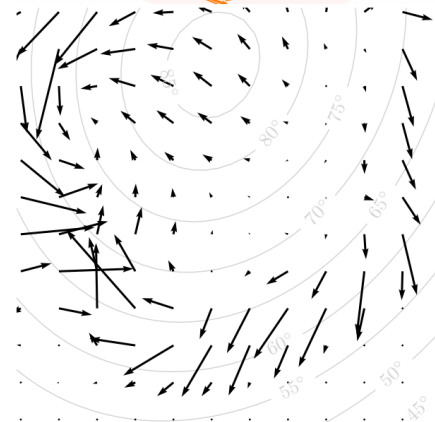
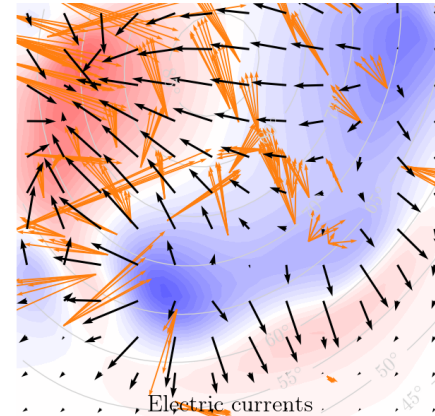
Convection velocity and electric potential



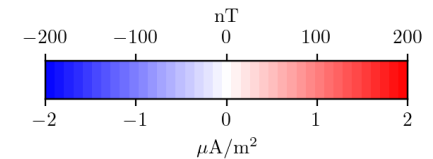
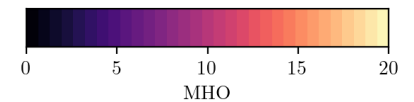
FAC and magnetic field



Ground magnetic field

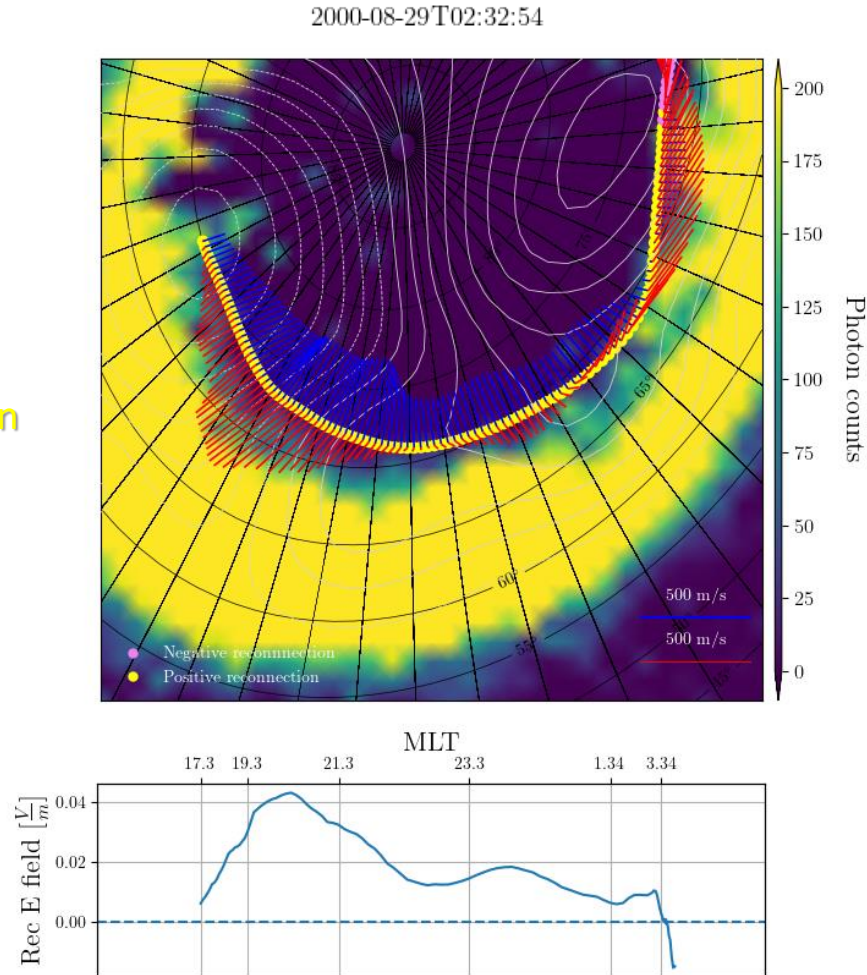


2000-08-29 02:32:54

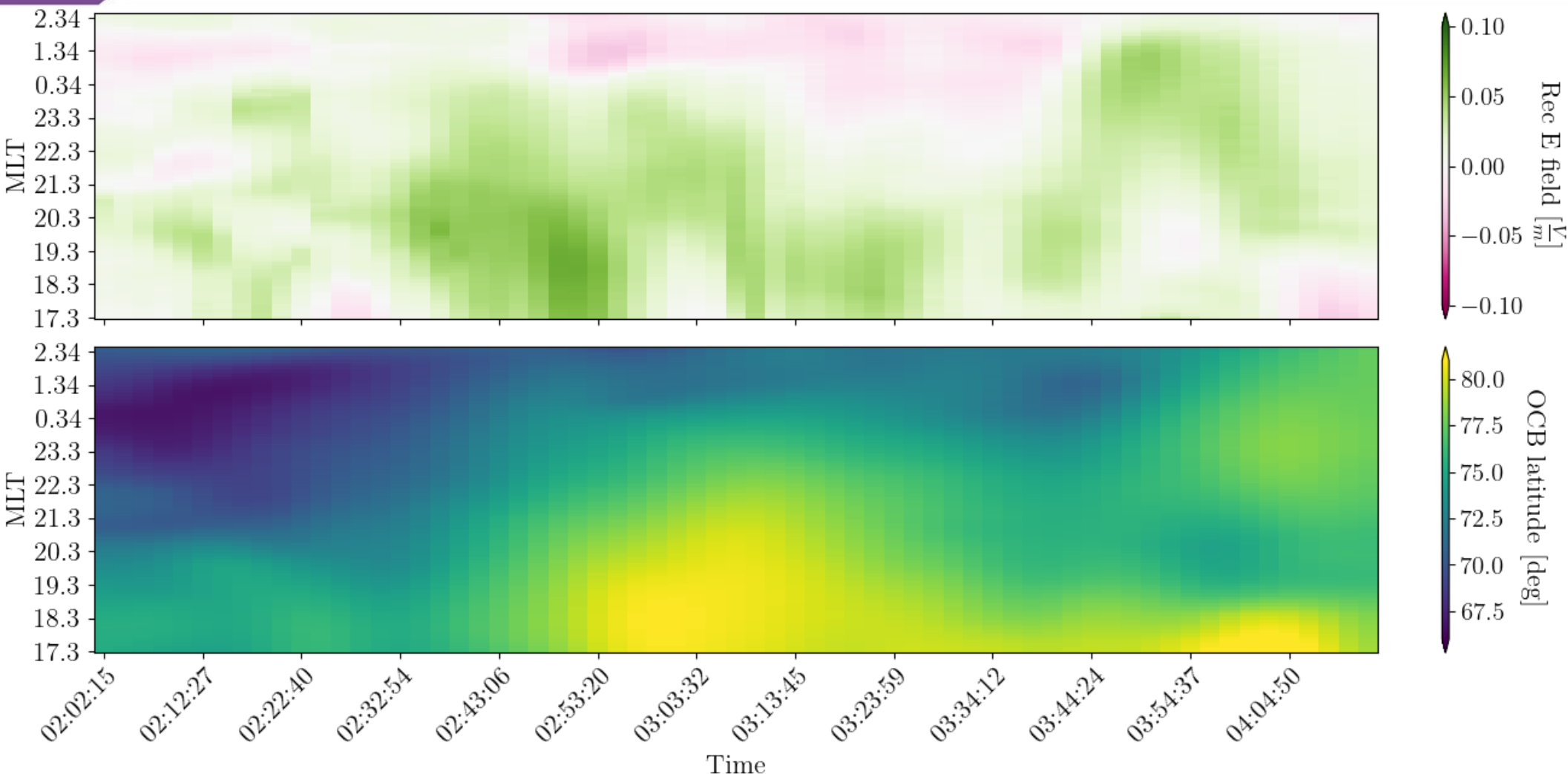


→ 100 nT (ground), 50 nT (space)
225 mA/m, 500 m/s

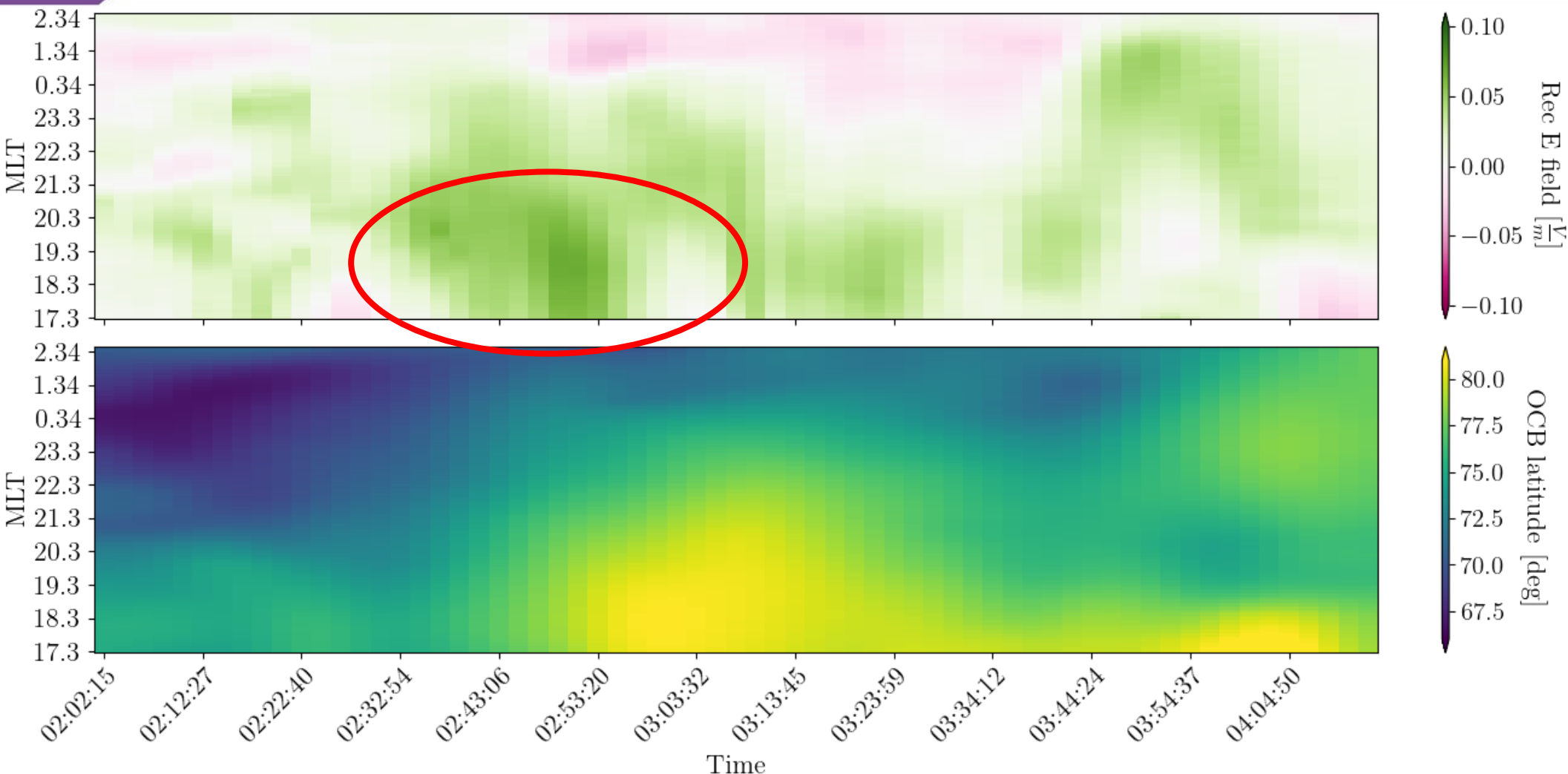
Blue arrows - OCB velocity
Red arrows – convection velocity
Yellow dots – positive reconnection



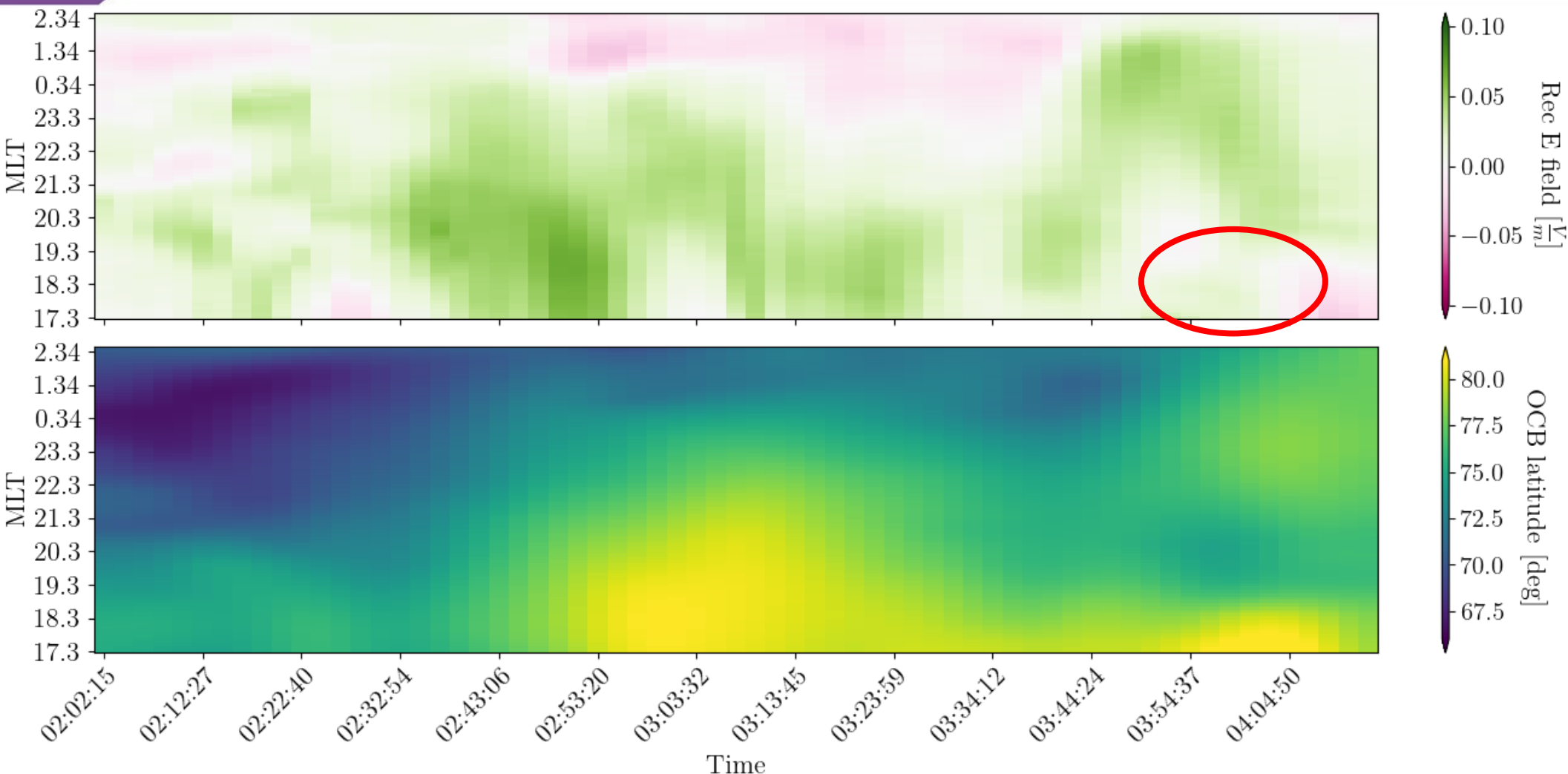
Regional reconnection electric fields



Regional reconnection electric fields



Regional reconnection electric fields



Regional reconnection electric fields

