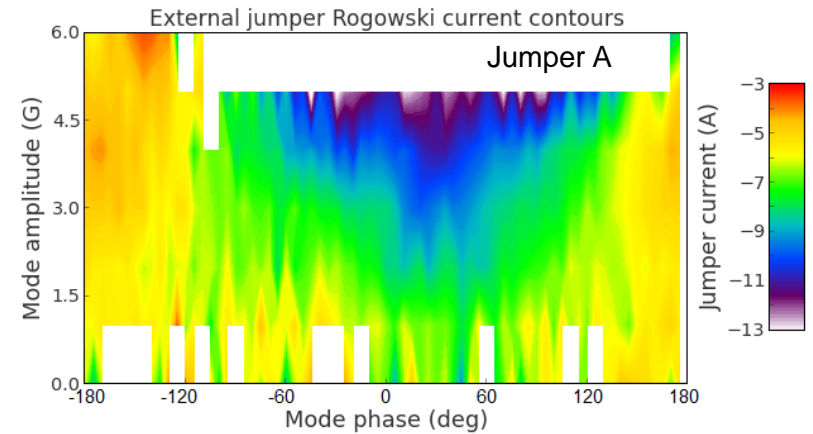


HBT-EP is exploring halo currents and effects of ferromagnetic material near the plasma surface

Halo currents

- Halo currents are measured via segmented plasma current Rogowski coils, jumpers between otherwise-isolated chamber sections, and a grounded electrode in the scrape-off layer
- Halo currents strongly depend on the plasma's major radius, and amplitude and phase of non-axisymmetric magnetic field components
- Halo currents connecting through the vessel are seen to reach $\sim 0.2\%$ of the plasma current during typical kink mode activity, and $\sim 4\%$ of I_p during disruptions
- Upcoming machine hardware upgrades will focus on further diagnosing and controlling halo currents



Ferritic effects

- Ferromagnetic material near the plasma surface is seen to roughly double kink mode growth rates and increase error field sensitivity

