

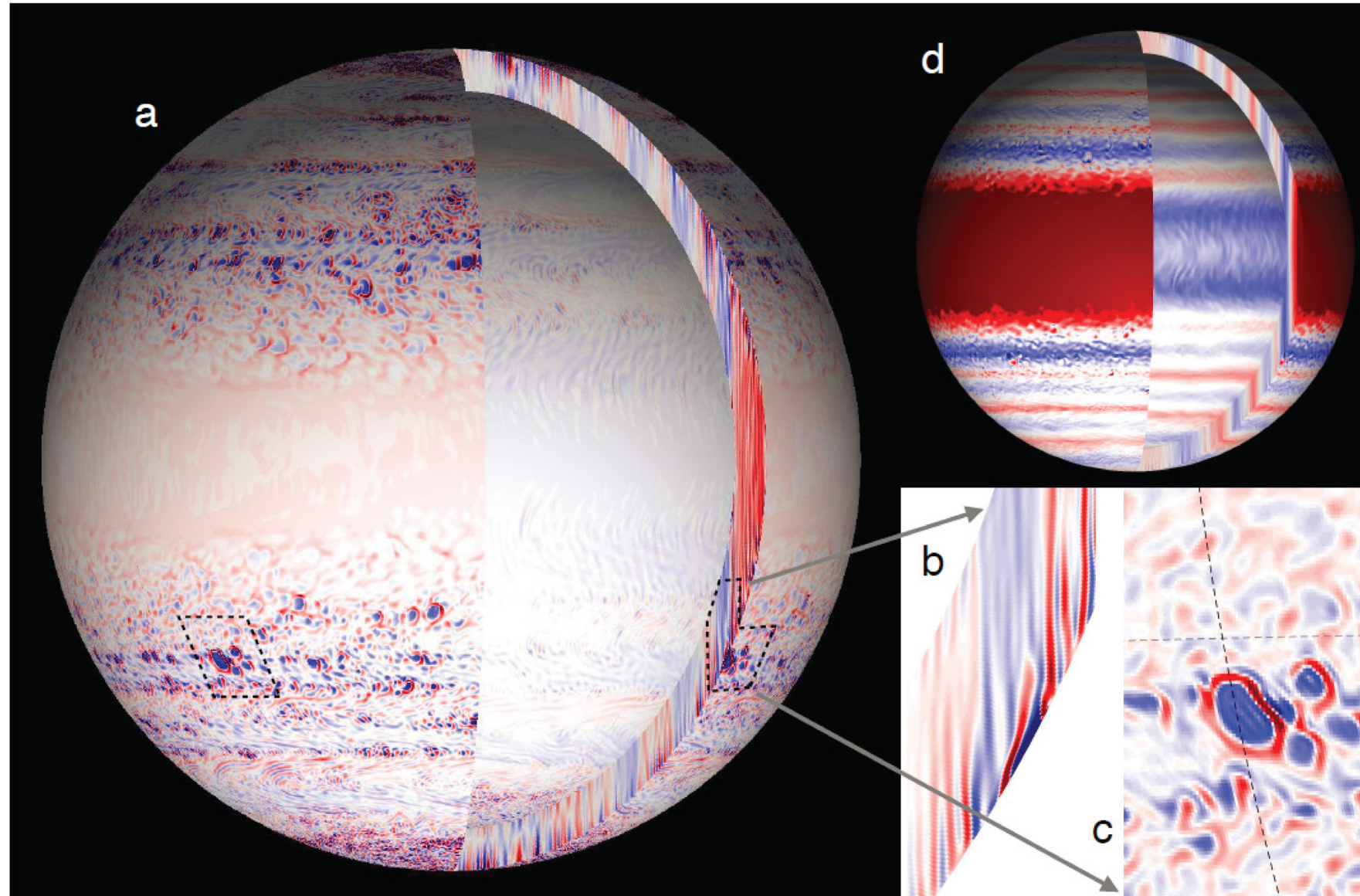


MagIC

MagIC Possibilities

Johannes Wicht

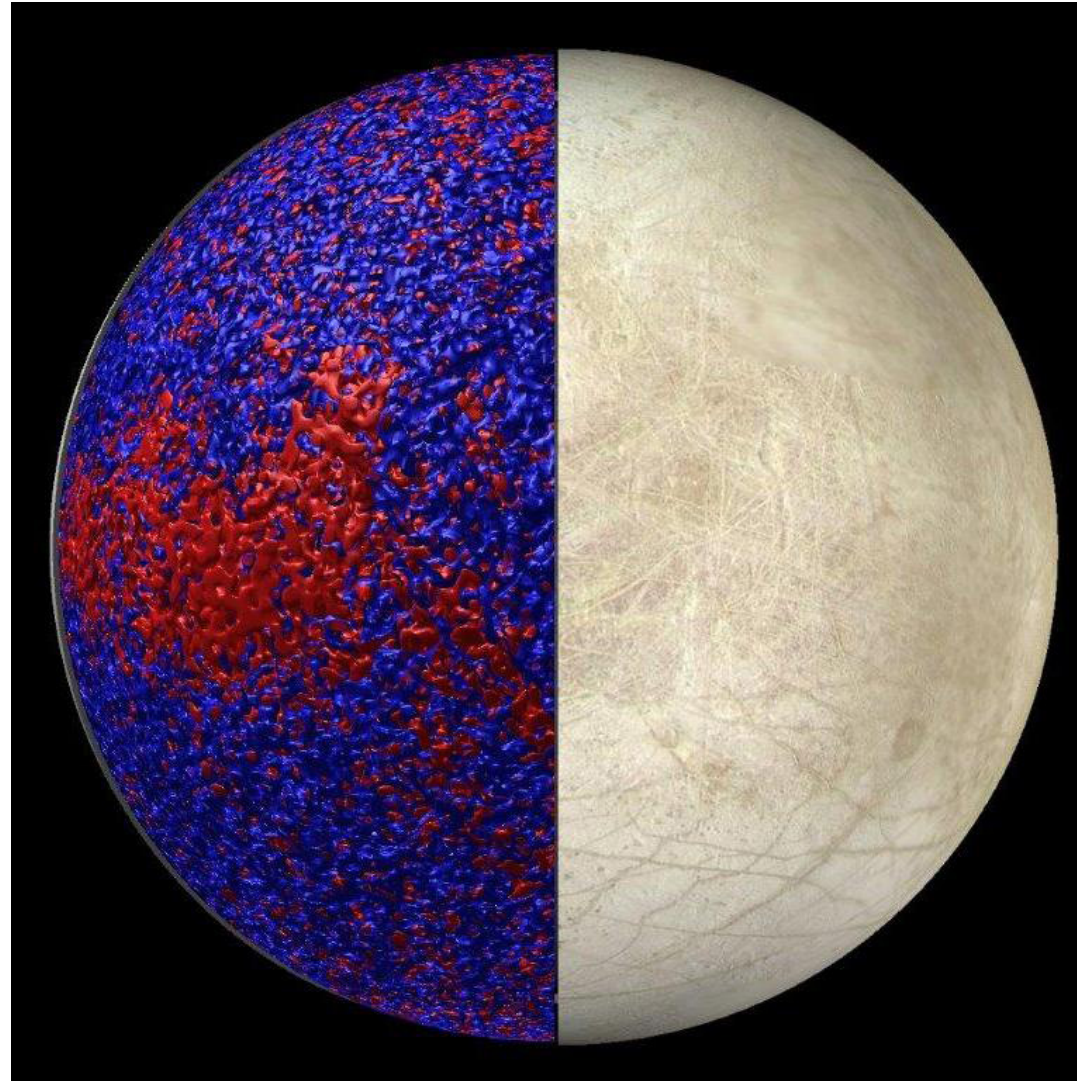
Convection in Jupiter



Heimpel et al. 2015

- Formation of eddies on Jupiter.
- Anelastic approximation, low E , stably stratified outer layer.

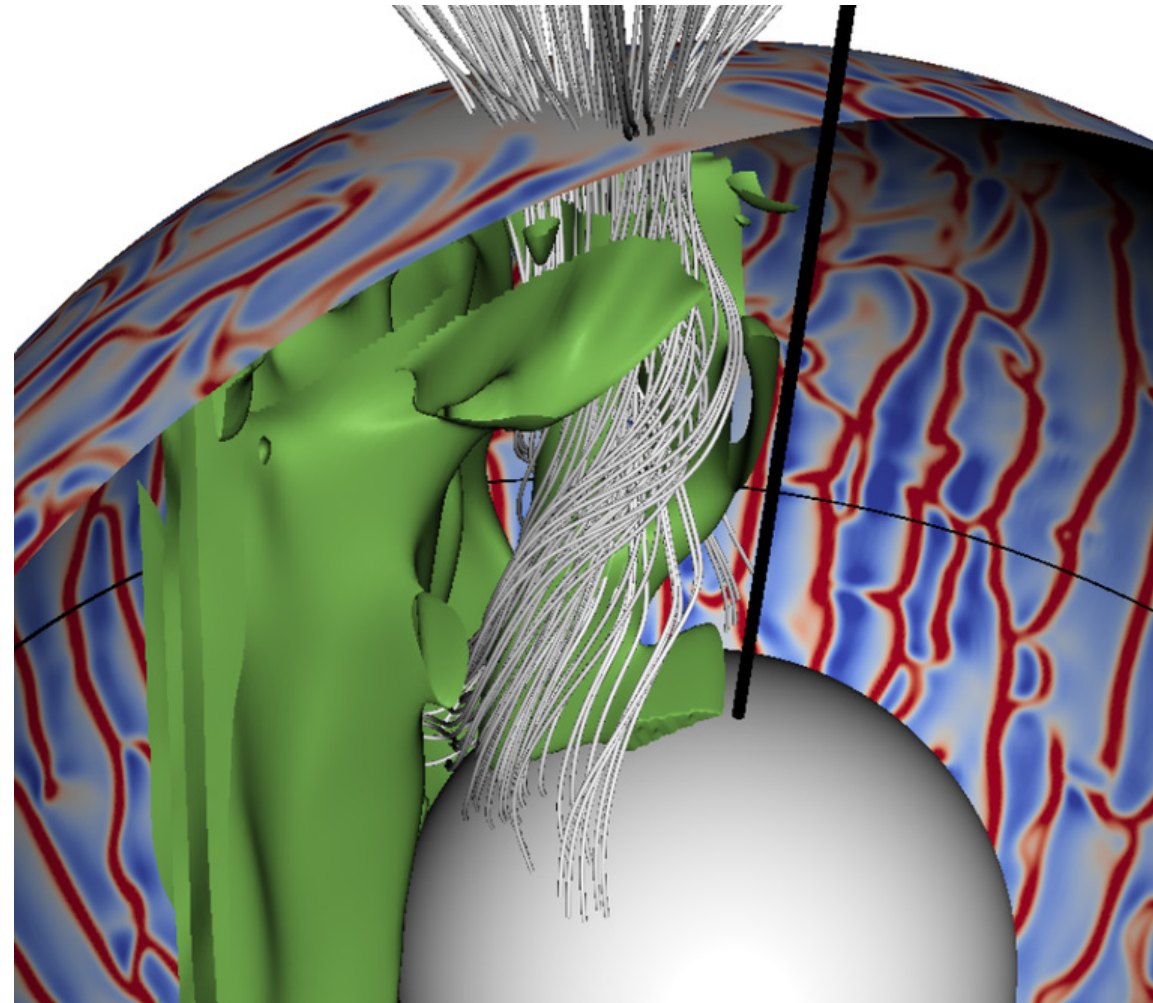
Convection in Europa's Ocean



Soederlund et al. 2013

- Higher heatflux in equatorial region explaine chaos terrain.
- High Ra, low Pr, loss of rotation dominance ($Ro \sim 1$).

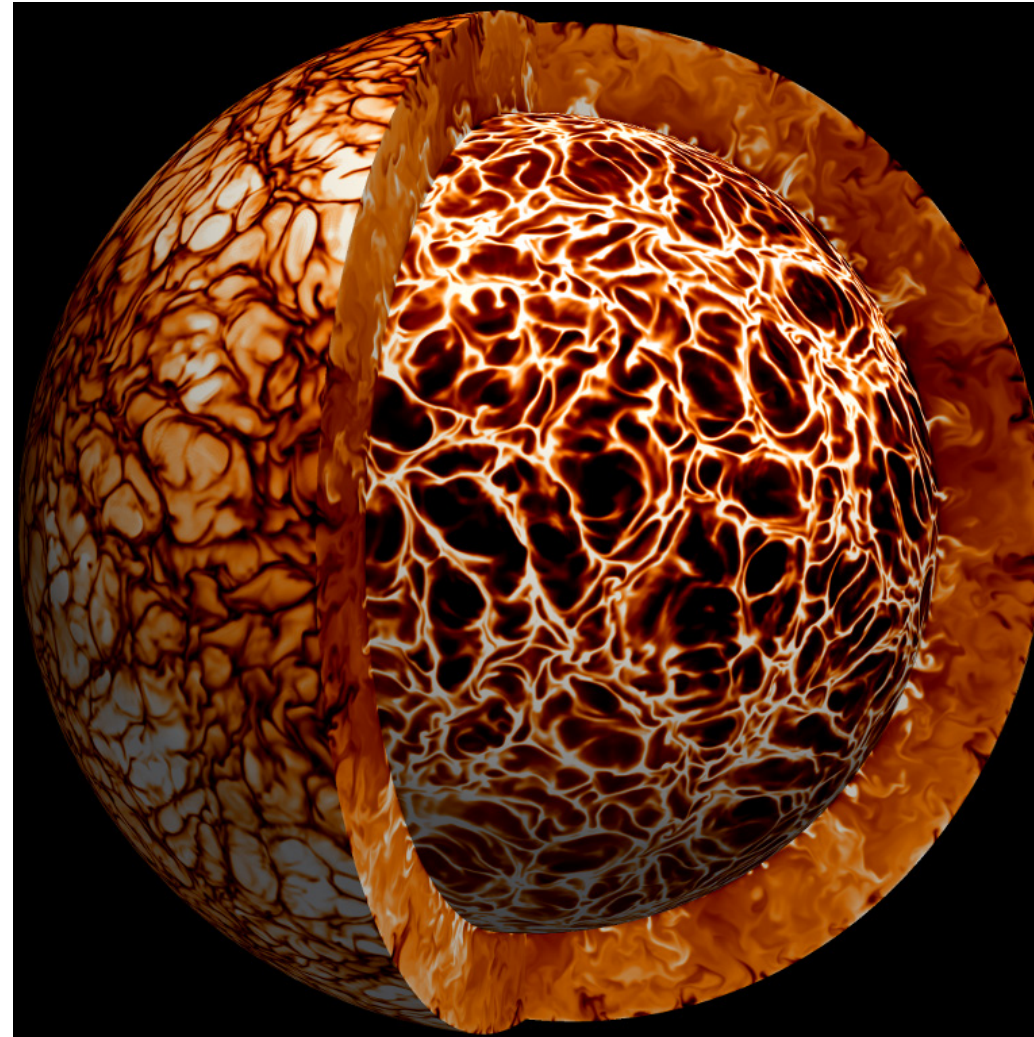
Magnetic Field in Stars



Yadav et al. 2015

- Formation of star spots.
- Anelastic approximation, strong density gradient, large Ra .

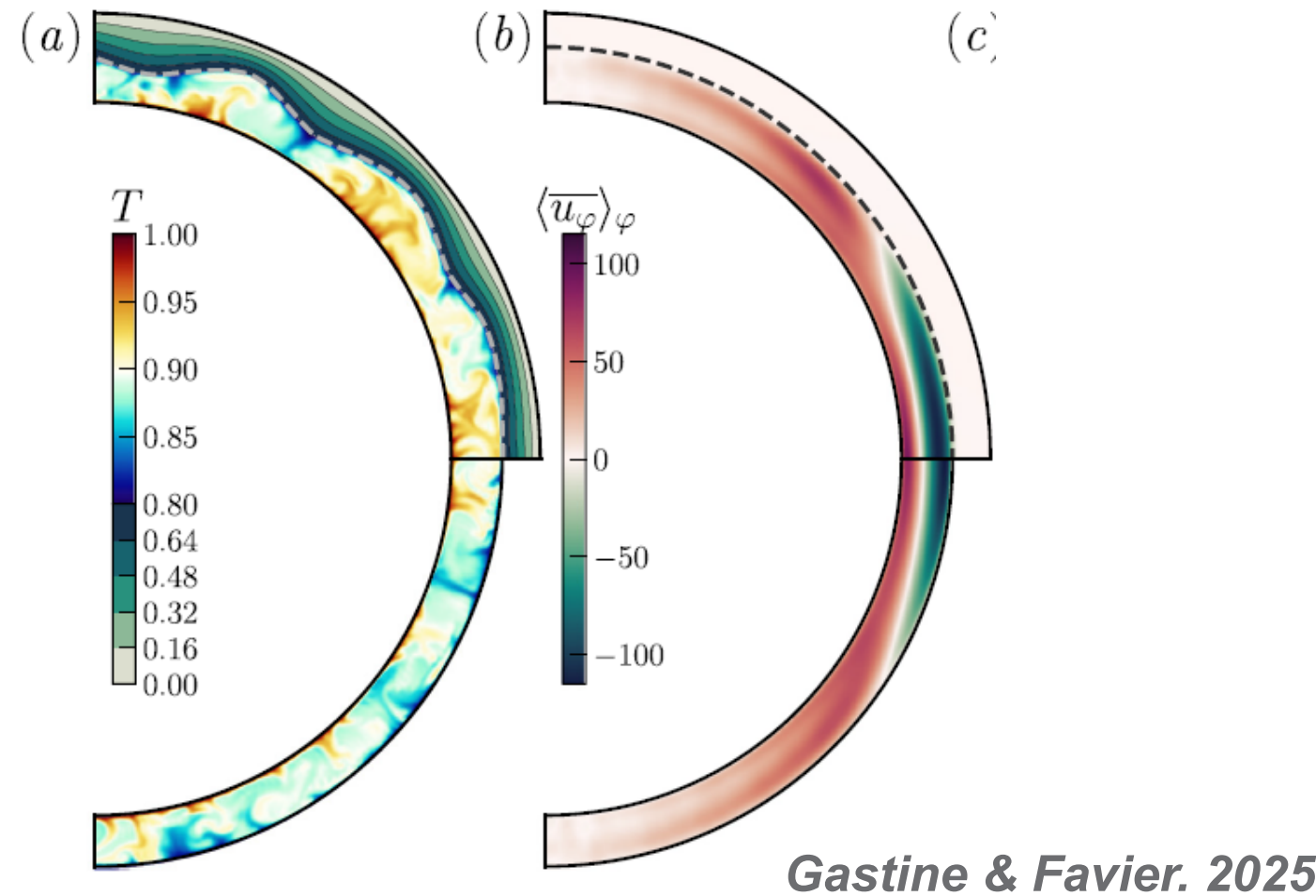
Fundamental Fluid Dynamics



Gastine et al. 2015

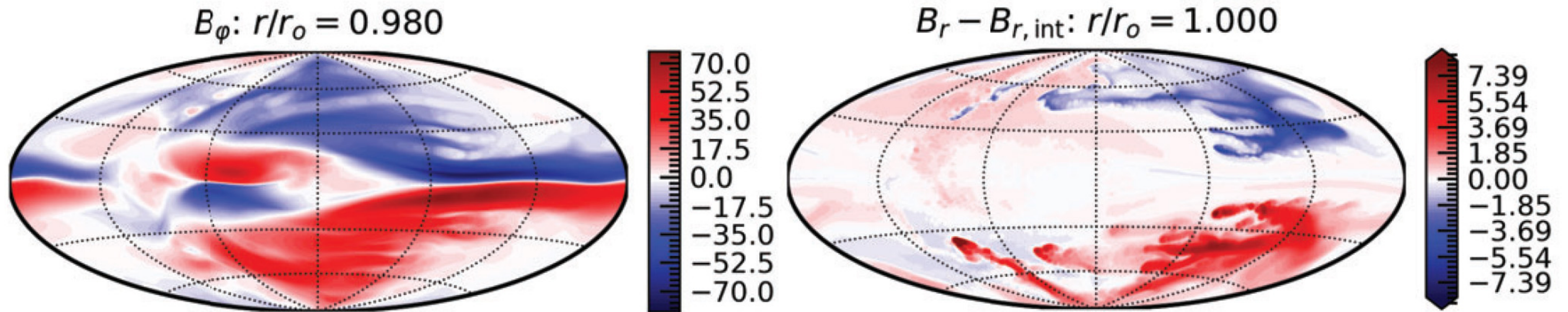
- Scaling and boundary layers in non-rotating convection.

Convection Underneath Ice Shells



- Evolution of the ice/ocean interface in Icy Moons.
- Modelling a phase field as another skalar variable.

Exoplanets



Boening et al. 2025

- Dynamo action in stably stratified atmospheres of Super Hot Jupiters.
- New magnetic instability that impact exoplanet observables.

What are your plans?