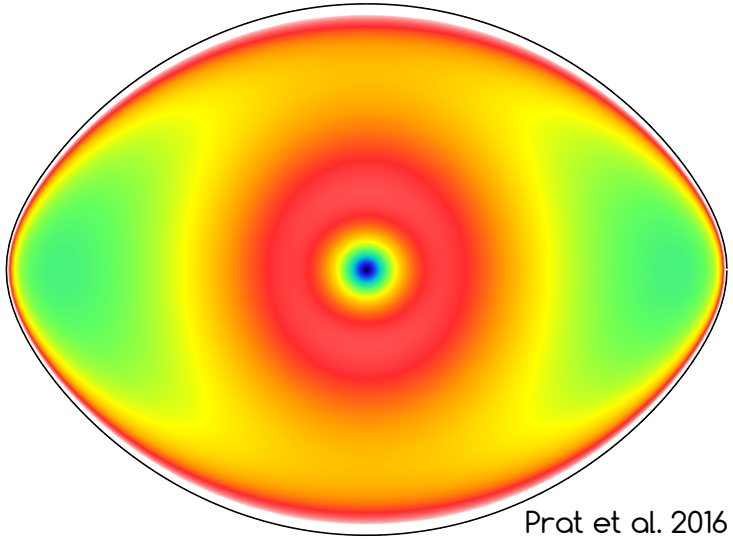
Waves in the radiative zones of rotating magnetized stars

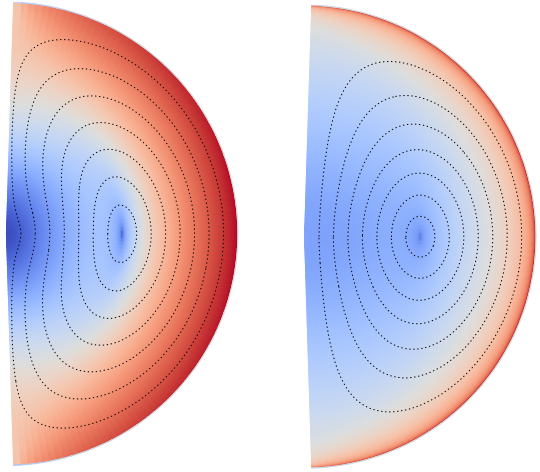
A.Valade, V.Prat, S.Mathis & K.Augustson



Prat et al. 2016

Toward a better description of wave dynamics

- Dispersion relation for Magneto-Gravito-Inertial waves with a magnetic field of general topology in a spheroidal star



- Explore the parameter space with a ray tracing method for both poloidal and toroidal fields

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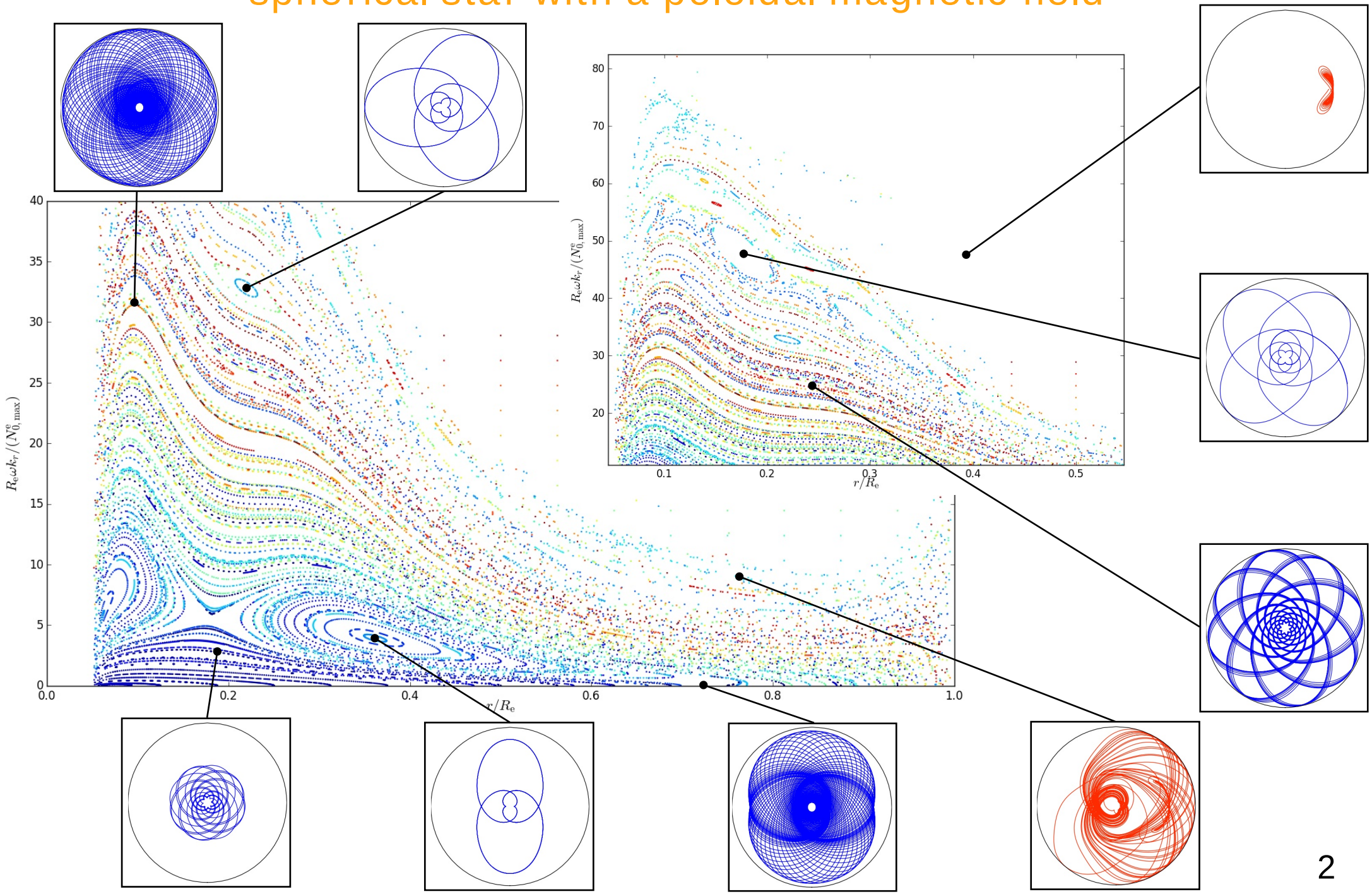
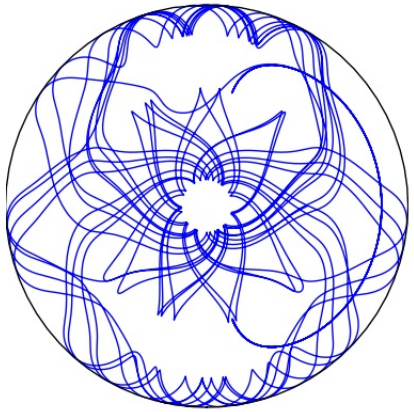
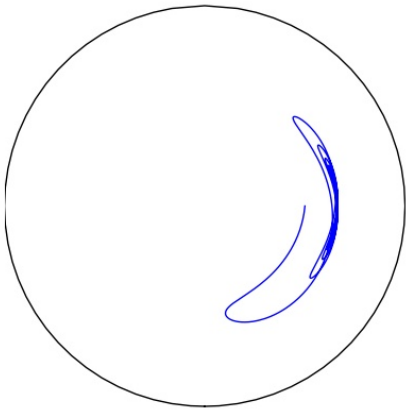
Waves families : Poincaré sections and trajectories for a spherical star with a poloidal magnetic field



Conclusion & perpectives

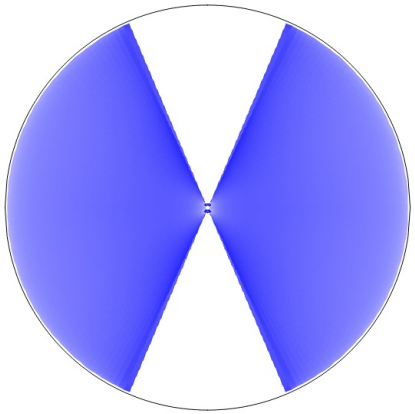


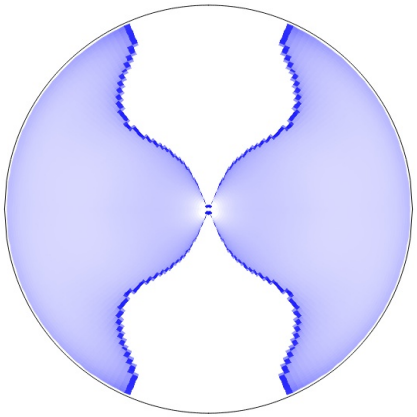
- Observation of new chaotic trajectories

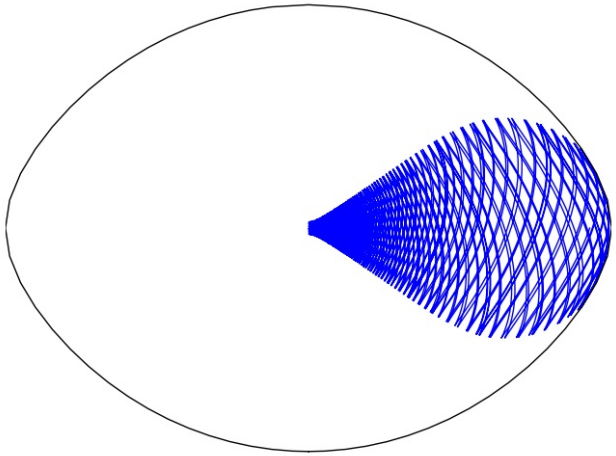


- Observation of trapped trajectories

- Modification of the cavities
- High dependance in the magnetic field topology







What's next ?

- The mixed case (poloidal & toroidal) in derformed stars
- Consider differential rotation
- Study wave-induced transport