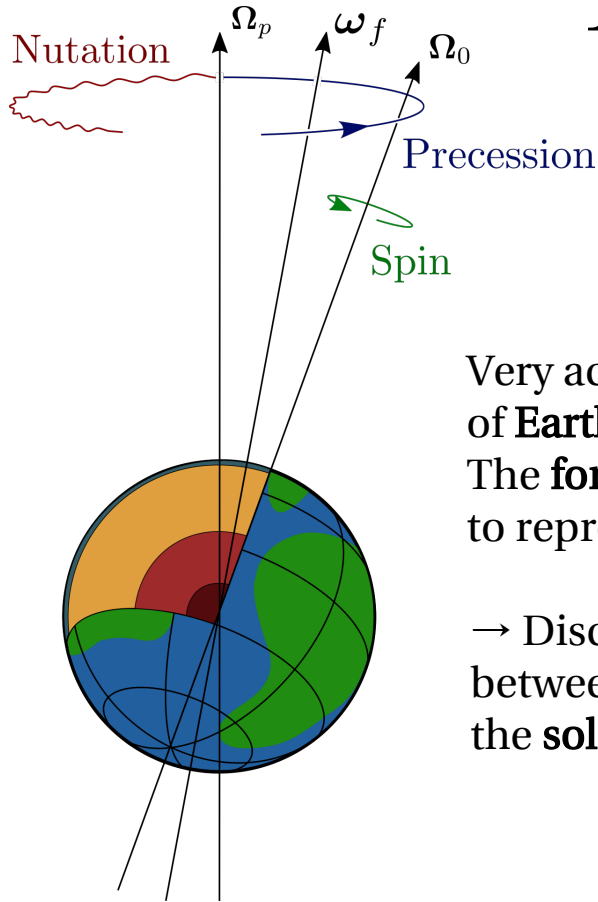


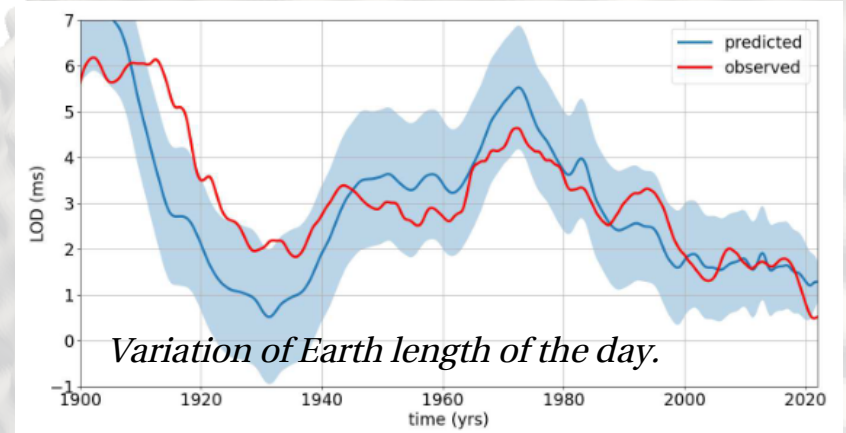
# Topographic effects in planetary magneto-hydrodynamic flows

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Very accurate measurement of **Earth's rotation**  
The **forward models** failed to reproduce the data.

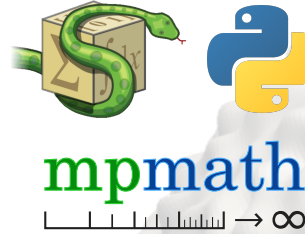
→ Discrepancy : **coupling** between the **fluid** core and the **solid** mantle.



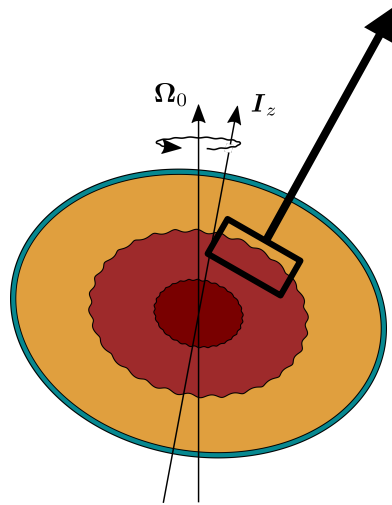
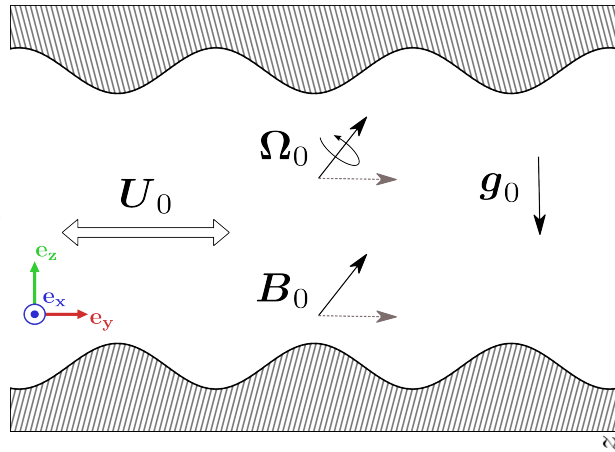
Goal: characterise the **electromagnetic** and **pressure drag** of a **conducting flow** over a **topography**.

→ Of interest for the Earth, planetary layer and fluid mechanics in general.

# Semi-analytical **weakly non linear** local model of flow over a topography



Asymptotic **perturbative** expansion  
**Symbolic** calculation  
+ **arbitrary** precision



Including:  
- **Stratification**  
- **Magnetic field**  
- **Rotation**

