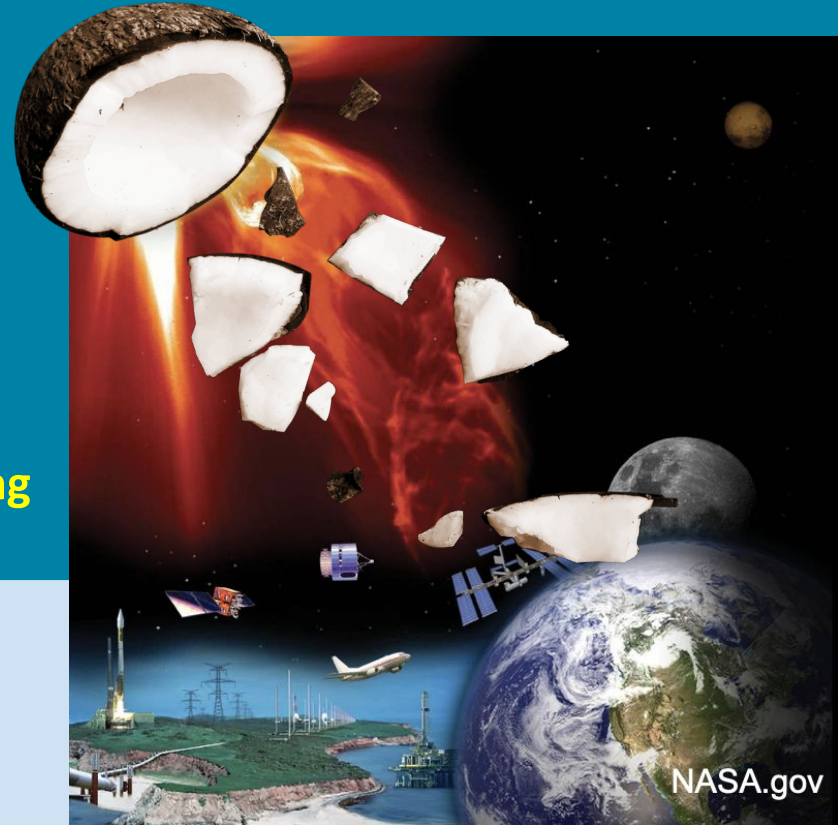
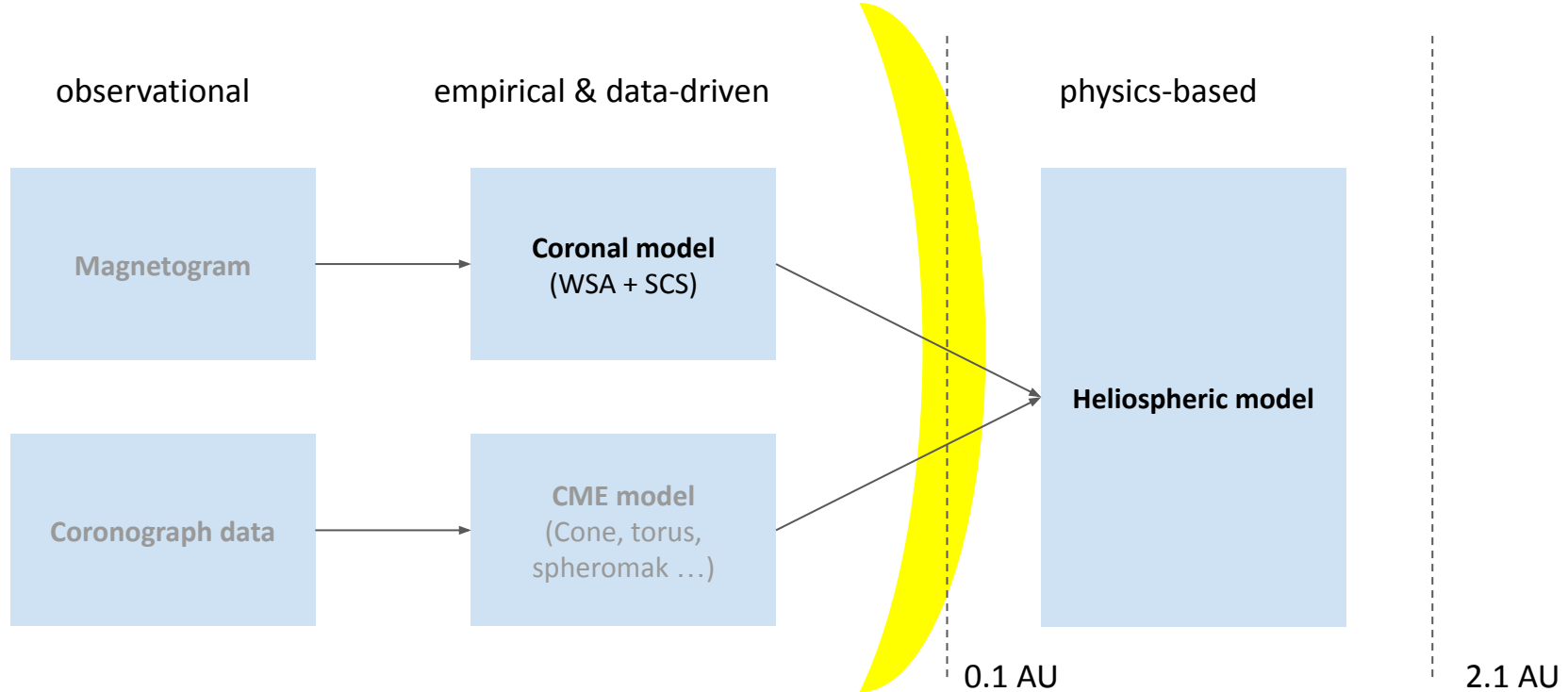


Mesh artefacts and electric fields: the bane of numerical global coronal modelling

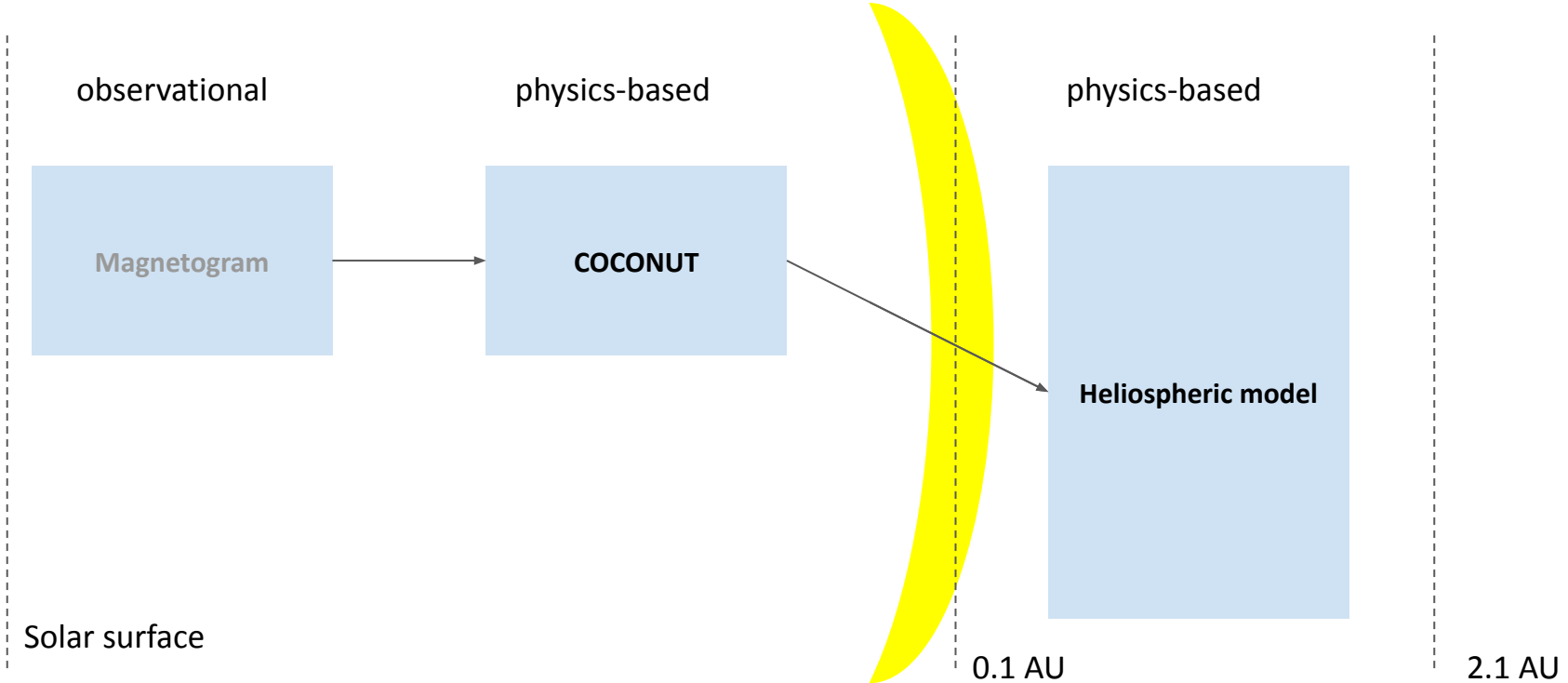
Michaela Brchnelova, Fan Zhang, Barbara Perri,
Andrea Lani, and Stefaan Poedts
michaela.brchnelova@kuleuven.be



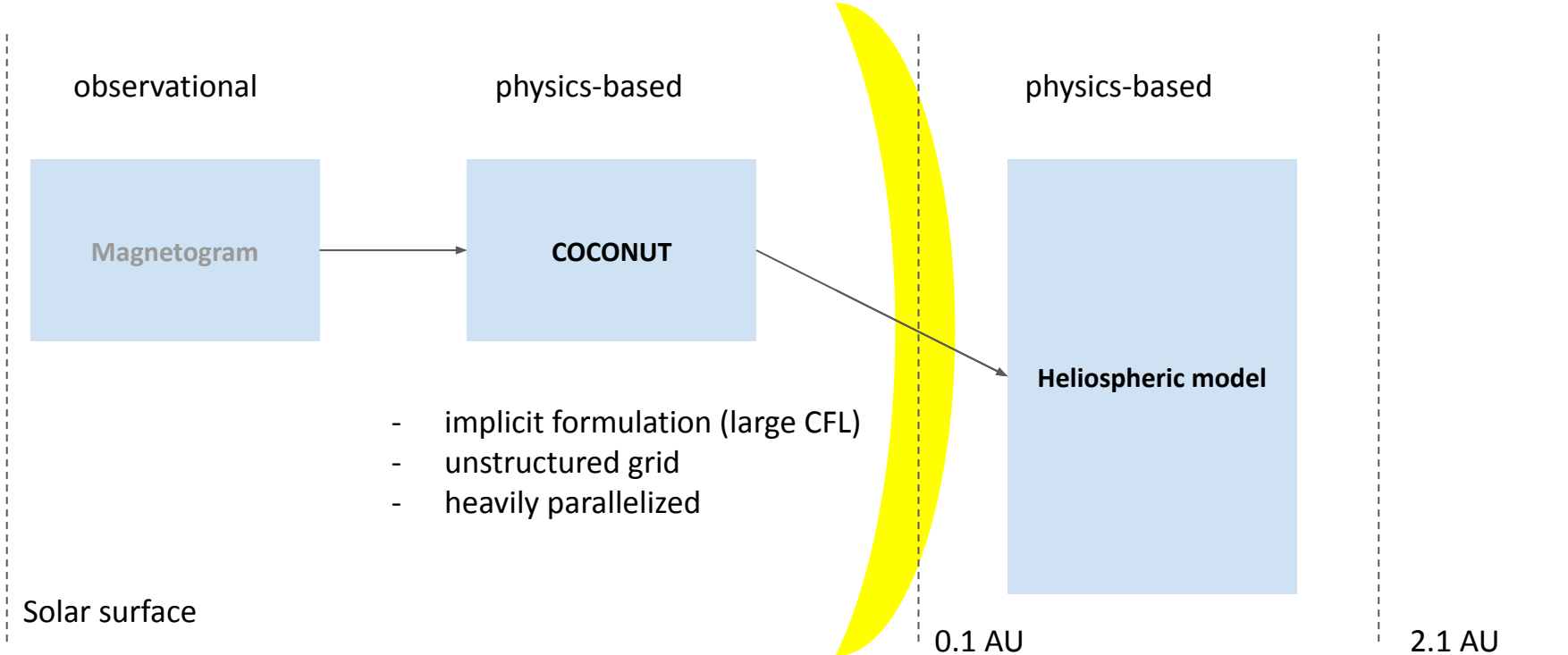
EUHFORIA (Poedts & Pomoell 2018)



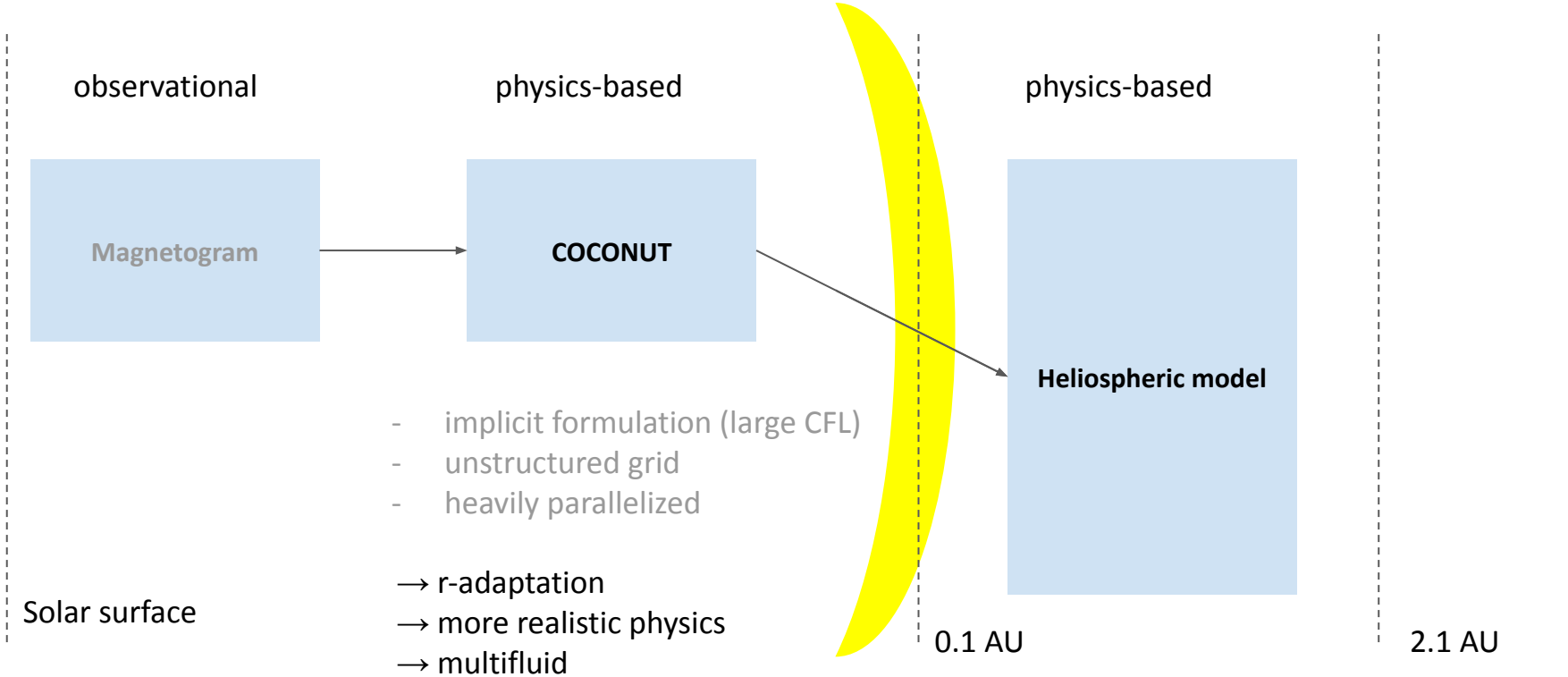
EUHFORIA: improved input?



EUHFORIA: improved input?

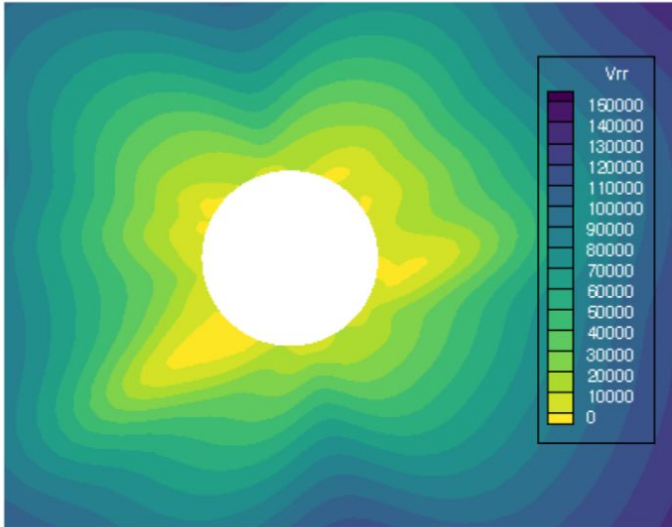


EUHFORIA: improved input?

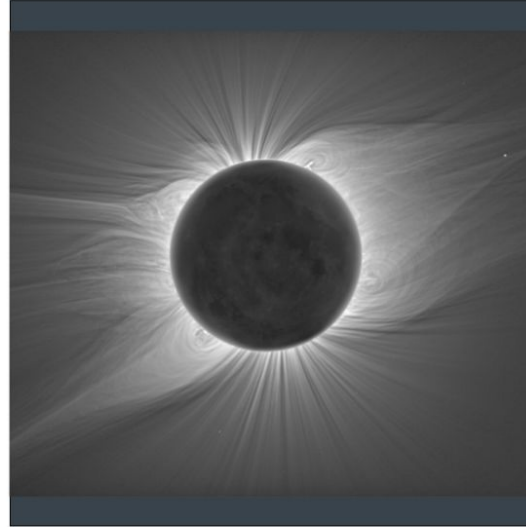


COCONUT: The inner BC

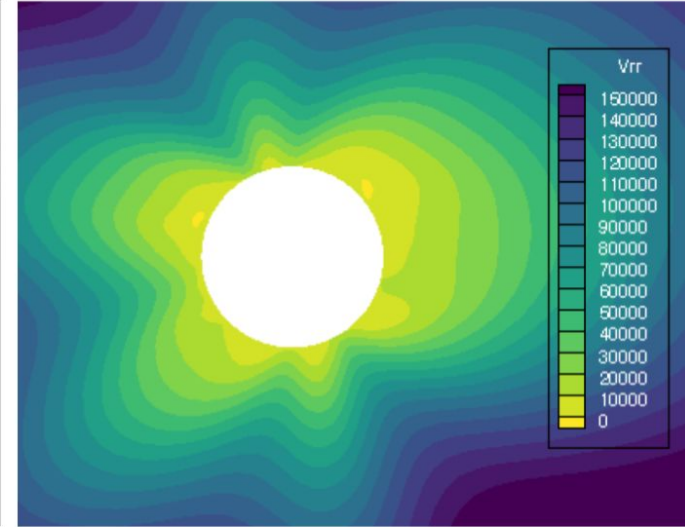
Radial velocity - low E field



Observation

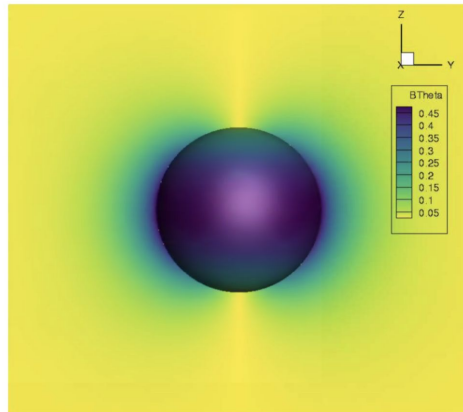
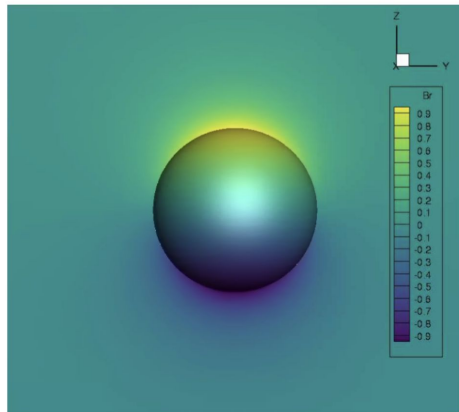


Radial velocity - large E field



COCONUT: Dipole

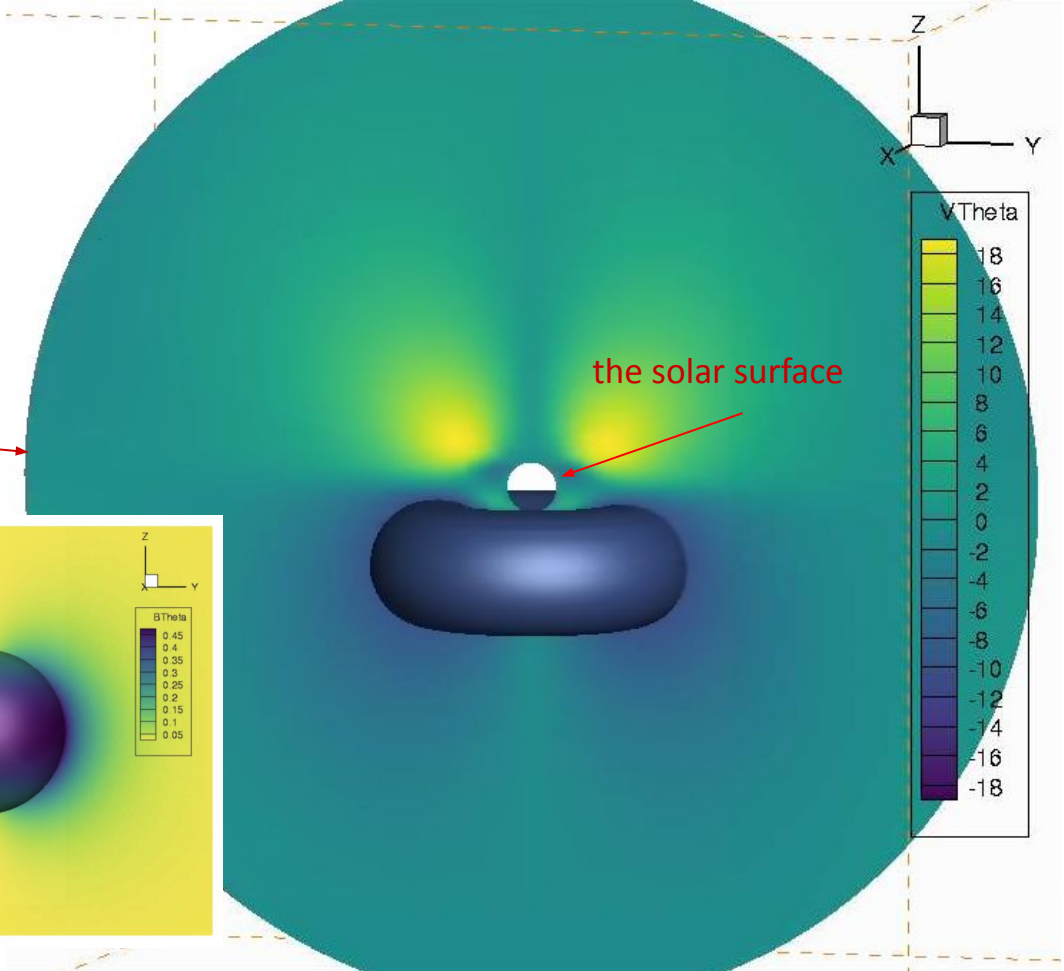
- a simple, magnetic dipole?



the outer boundary



the solar surface

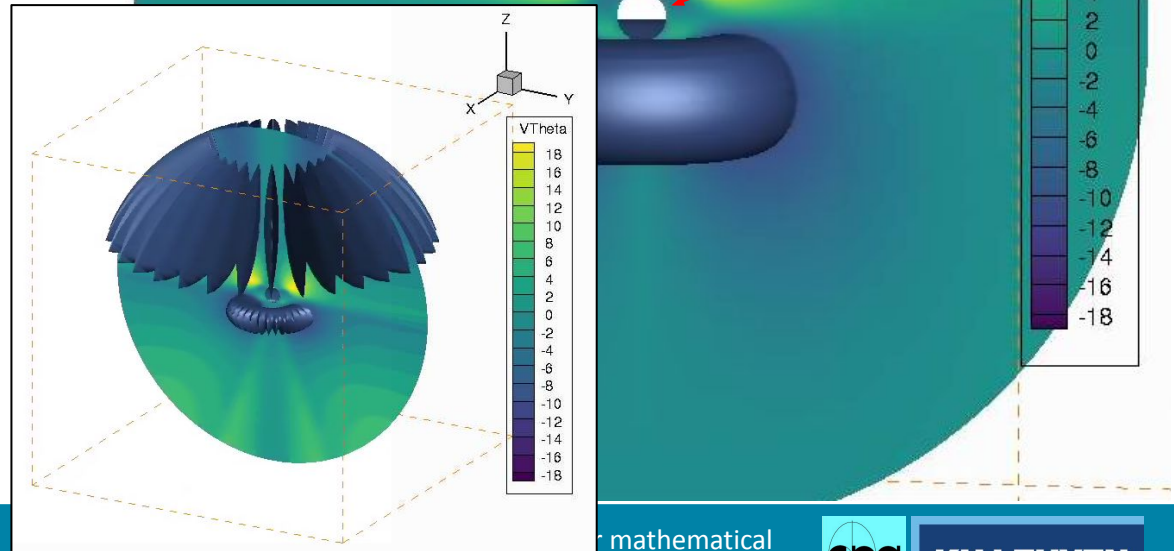


COCONUT: Dipole - grid

- a simple, magnetic dipole?

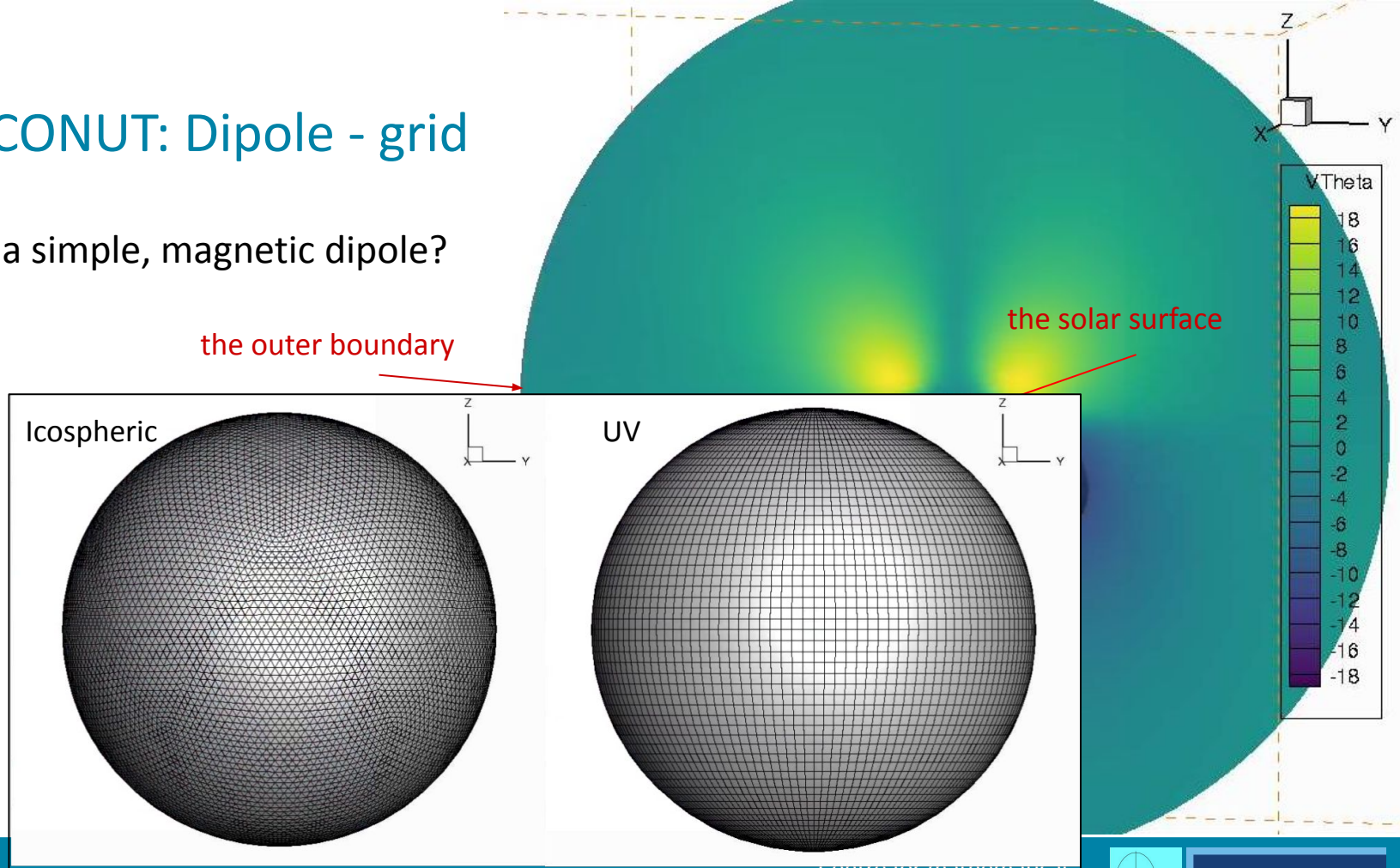
the outer boundary

the solar surface



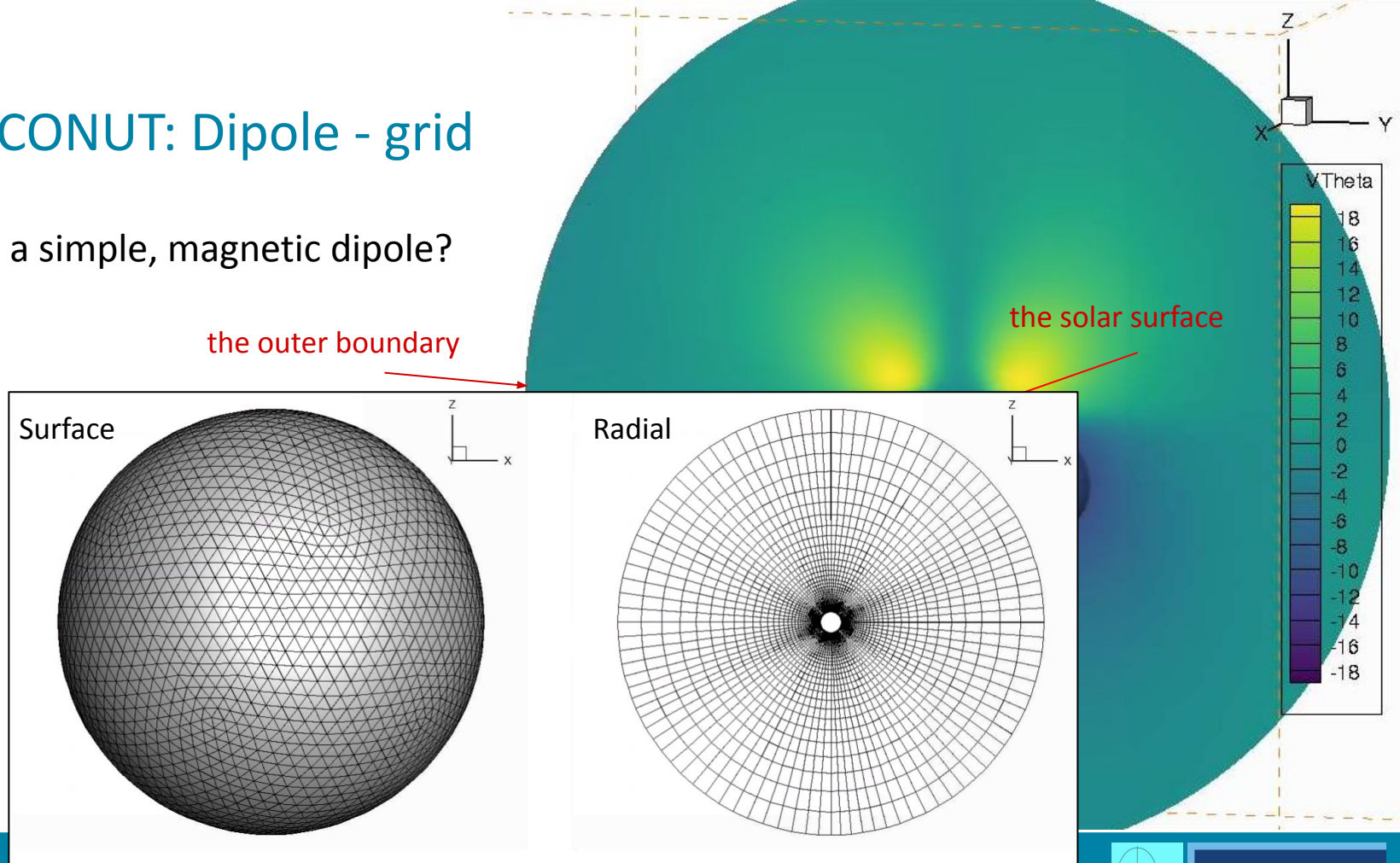
COCONUT: Dipole - grid

- a simple, magnetic dipole?



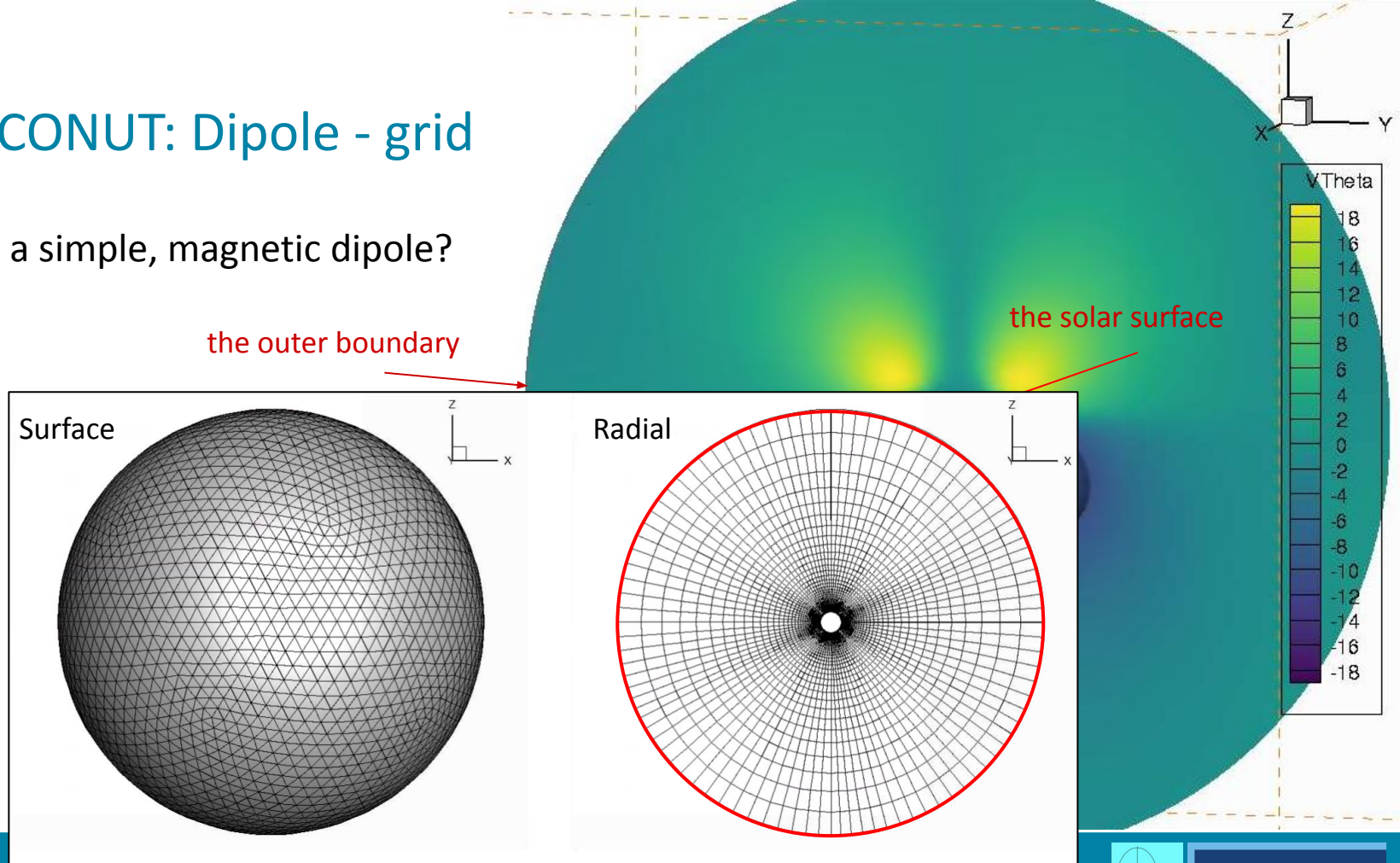
COCONUT: Dipole - grid

- a simple, magnetic dipole?



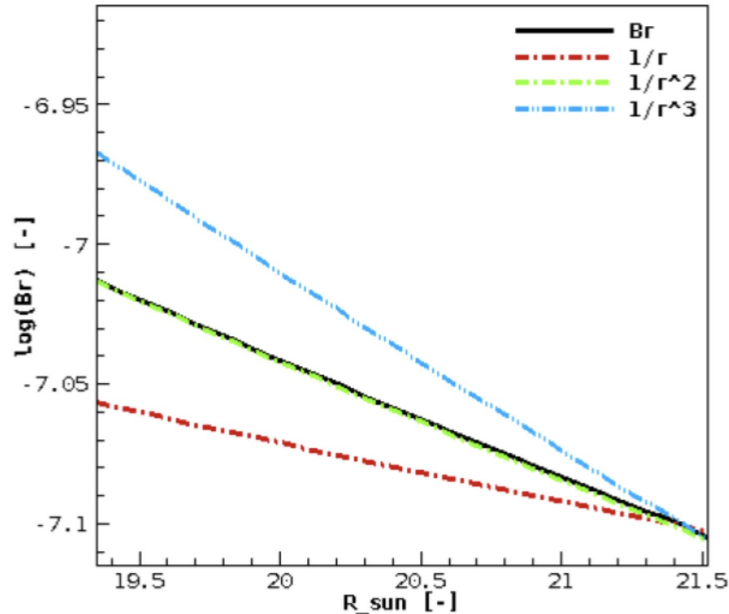
COCONUT: Dipole - grid

- a simple, magnetic dipole?

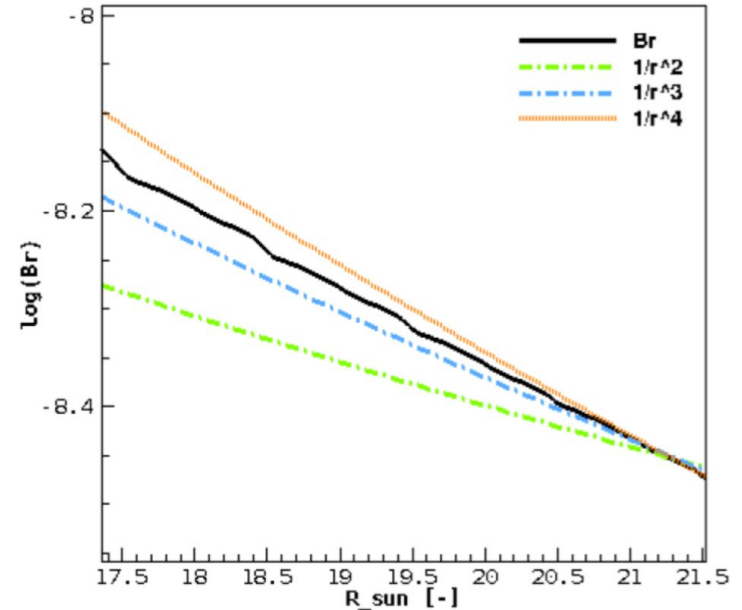


COCONUT: What about the outer BC?

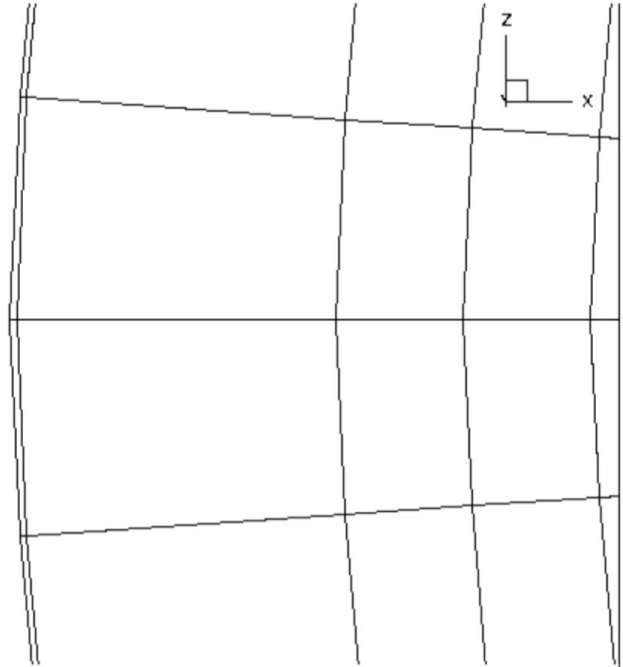
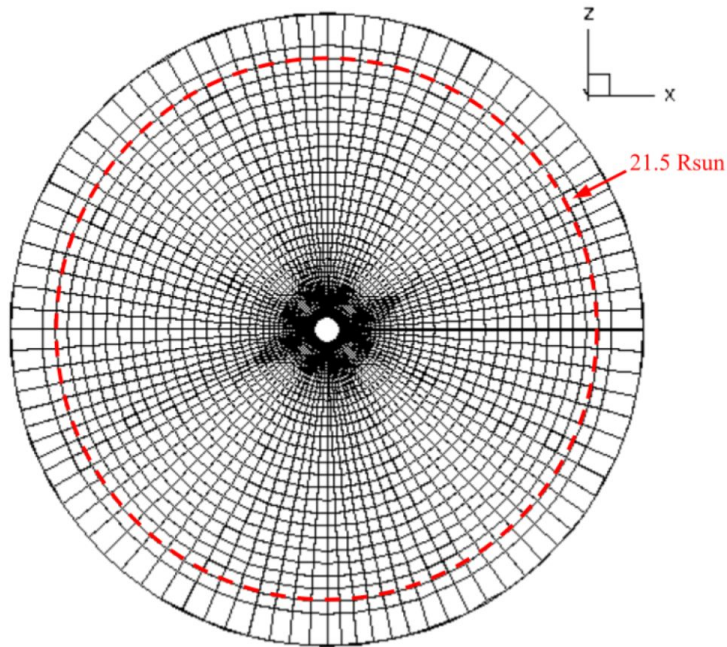
Radial B profile at 21.5 R_{sun} - quiet



Radial B profile at 21.5 R_{sun} - streamer

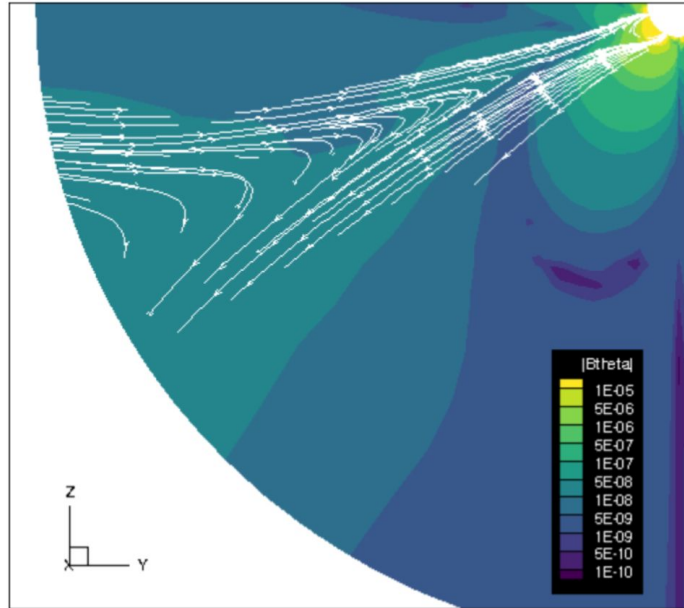


COCONUT: What about the outer BC? → a better grid

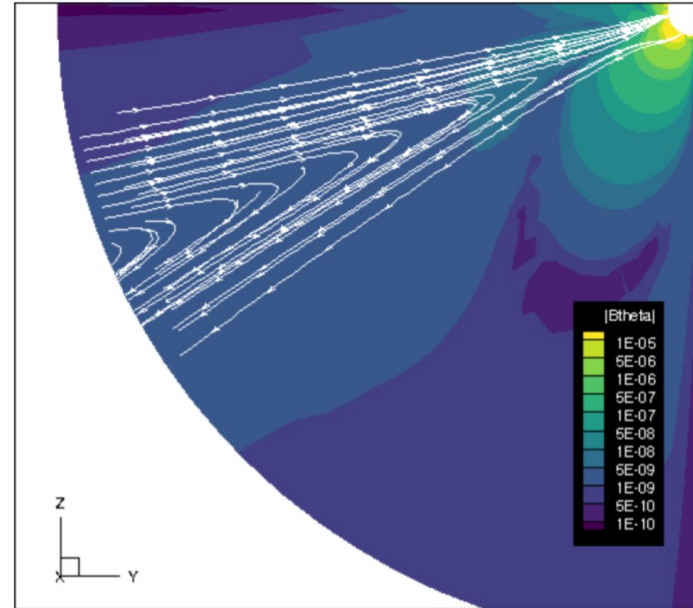


COCONUT: Lessons for the future?

B field lines - original radial spacing



B field lines - new radial spacing



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Thank you for your attention!

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