Gravitational waves from cosmological phase transitions.

Daniel Schmitt

KIT – Institute for Astroparticle Physics (IAP) & Institute for Theoretical Physics (ITP)

daniel.schmitt@kit.edu

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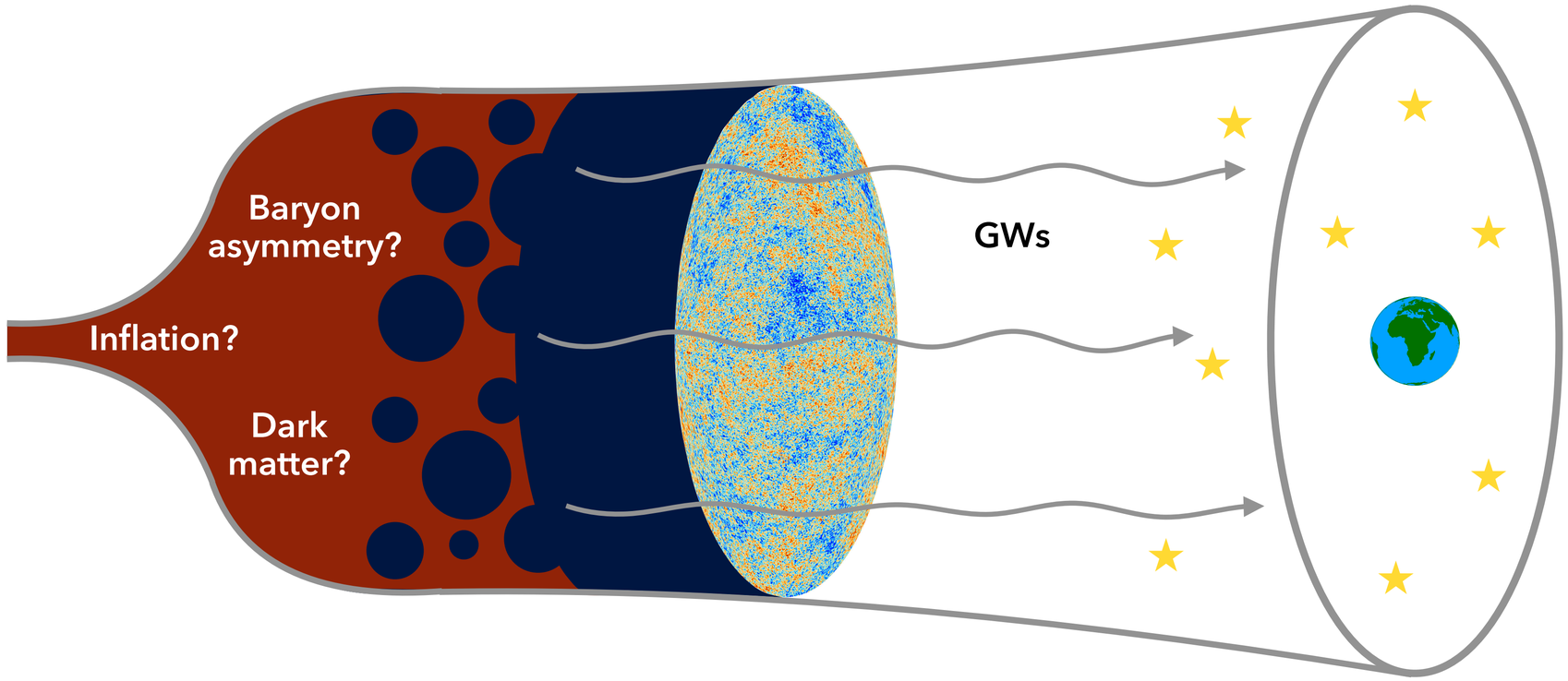
Motivation.

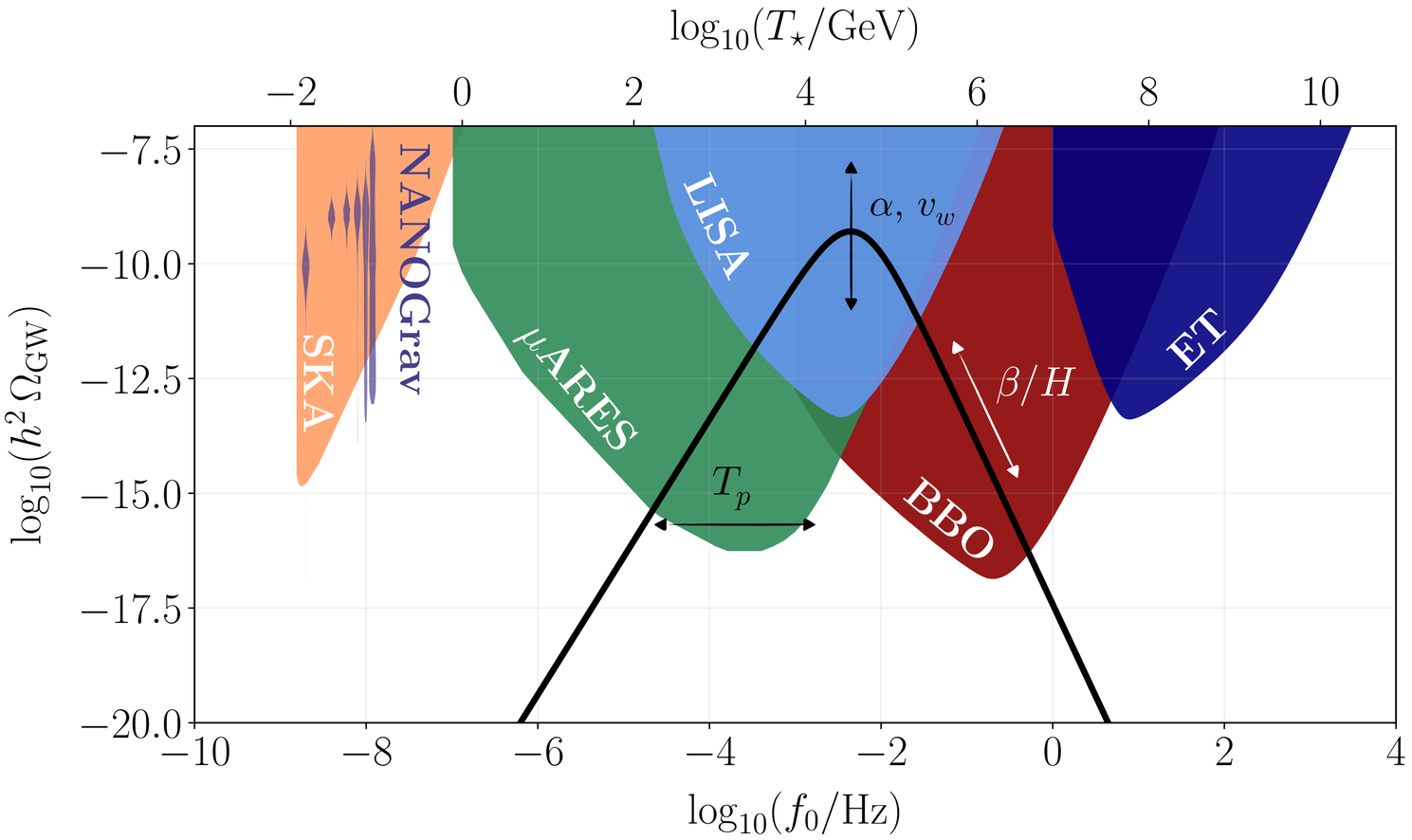
Primordial gravitational wave (GW) background: Smoking-gun signature of new physics.



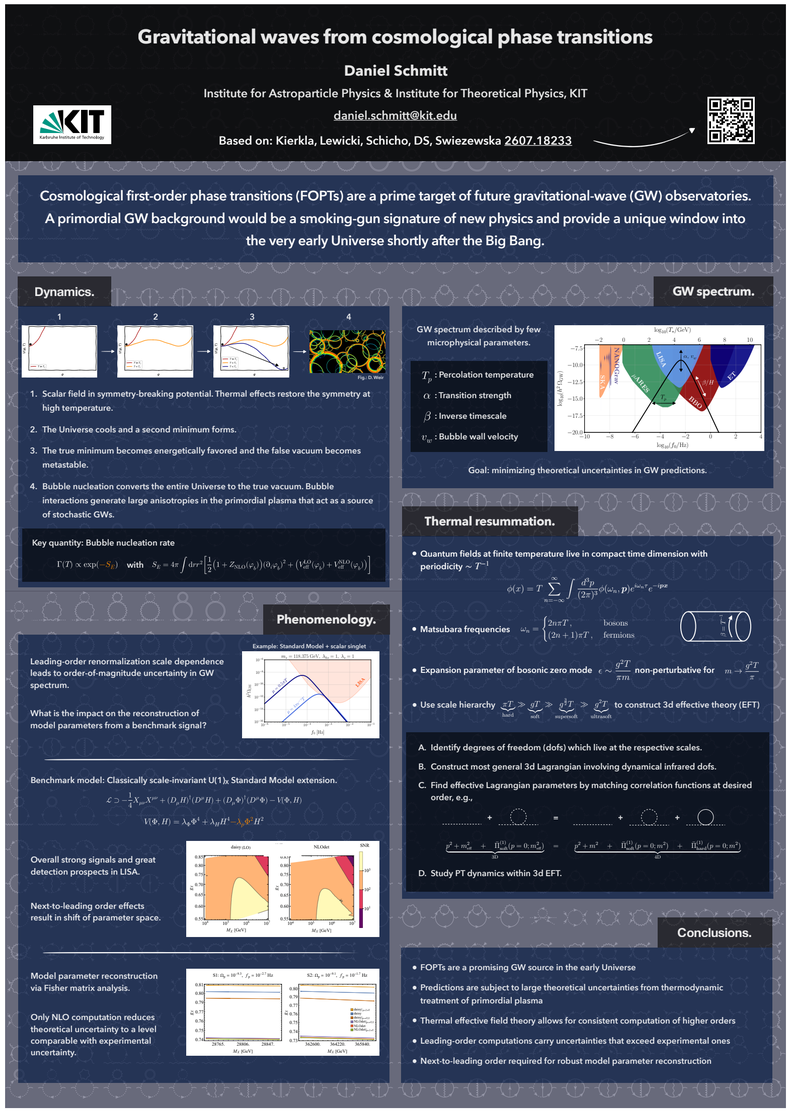
Gravitational wave landscape.

2023: First evidence of GW background in pulsar timing arrays.

~2035: Launch of Laser Interferometer Space Antenna (LISA).



Theoretical uncertainty > experimental uncertainty.

Description of primordial plasma can induce large uncertainties in GW predictions.

Goal: quantify and reduce uncertainties of theoretical predictions.