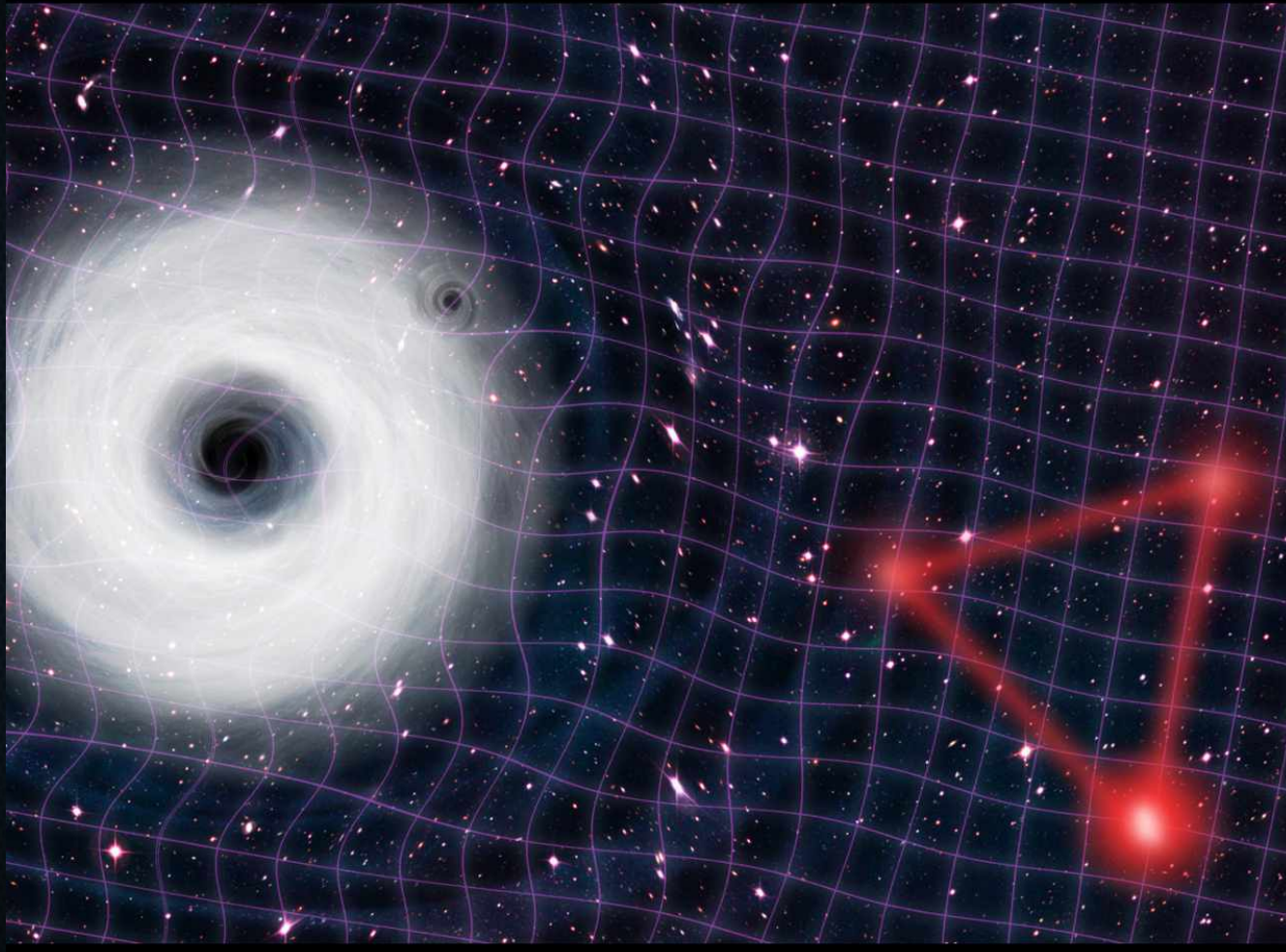


Extreme Dark Matter Tests with Extreme Mass Ratio Inspirals



Speaker: Otto A. Hannuksela (Nikhef)

In collaboration with: Kenny C. Y. Ng (GRAPPA), Tjonnie G. F. Li (CUHK)

Gravitational Wave Probes of Fundamental Physics

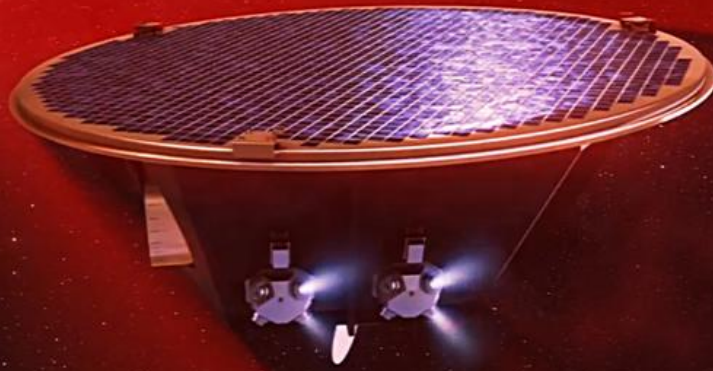


Utrecht University

Image credits: Antonio Mati

LISA

Image credits:AEI/MM/exozet



- Launch est. 2034
- At least one EMRI system per year (most models: ~ 100 - 1000 s)
- Could measure "dark matter spikes"
[Eda et al. (2015)]
[SI5.5, L3 Proposal]

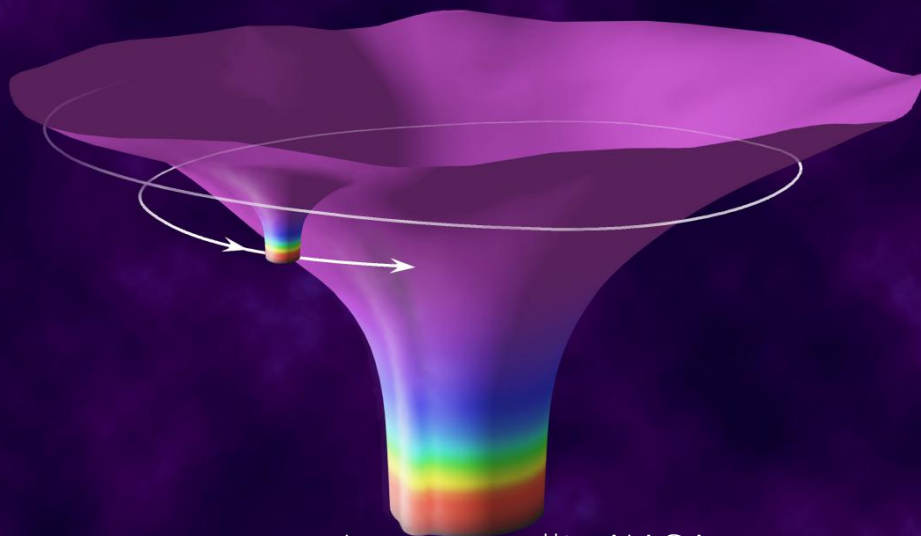
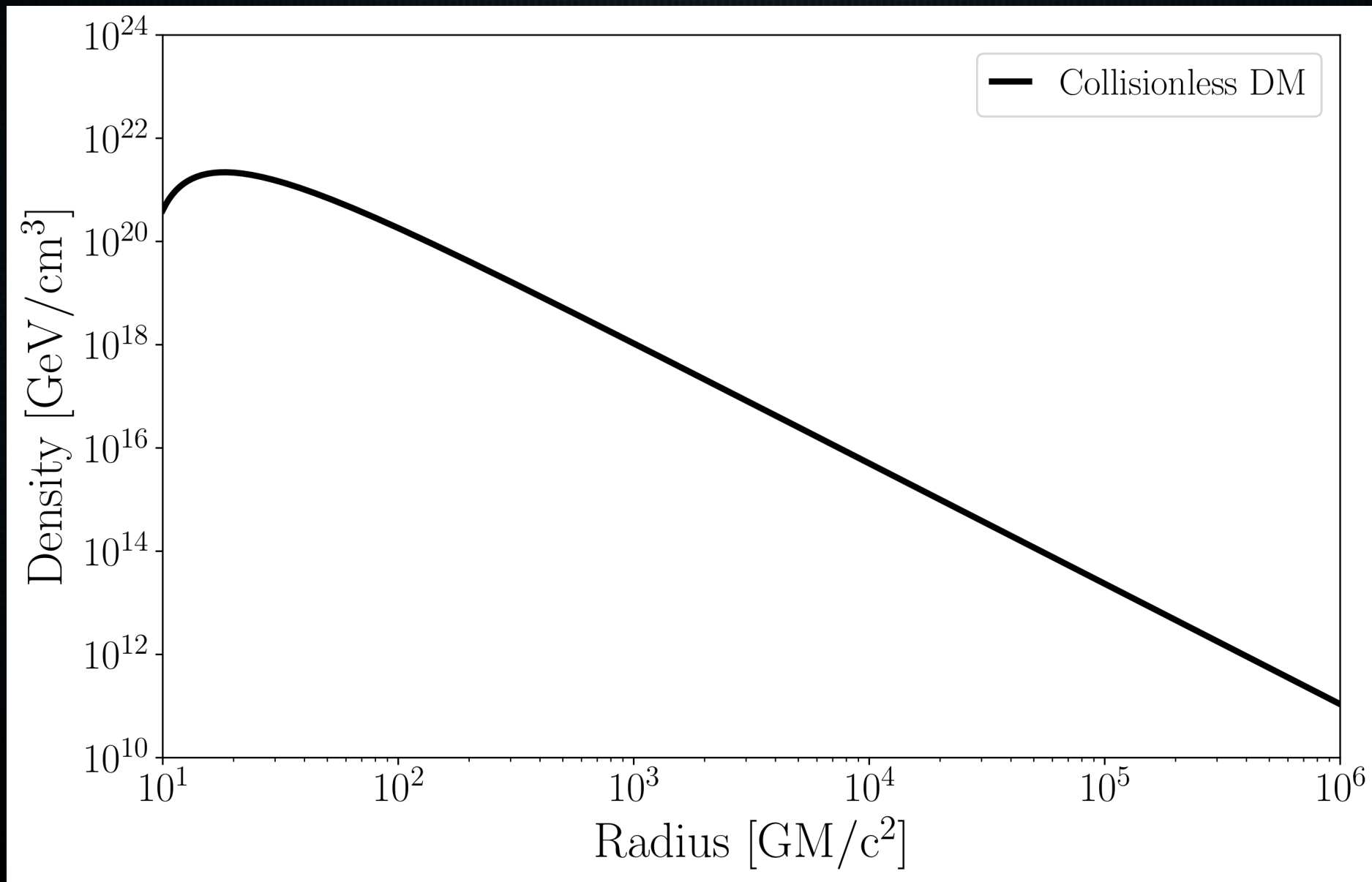
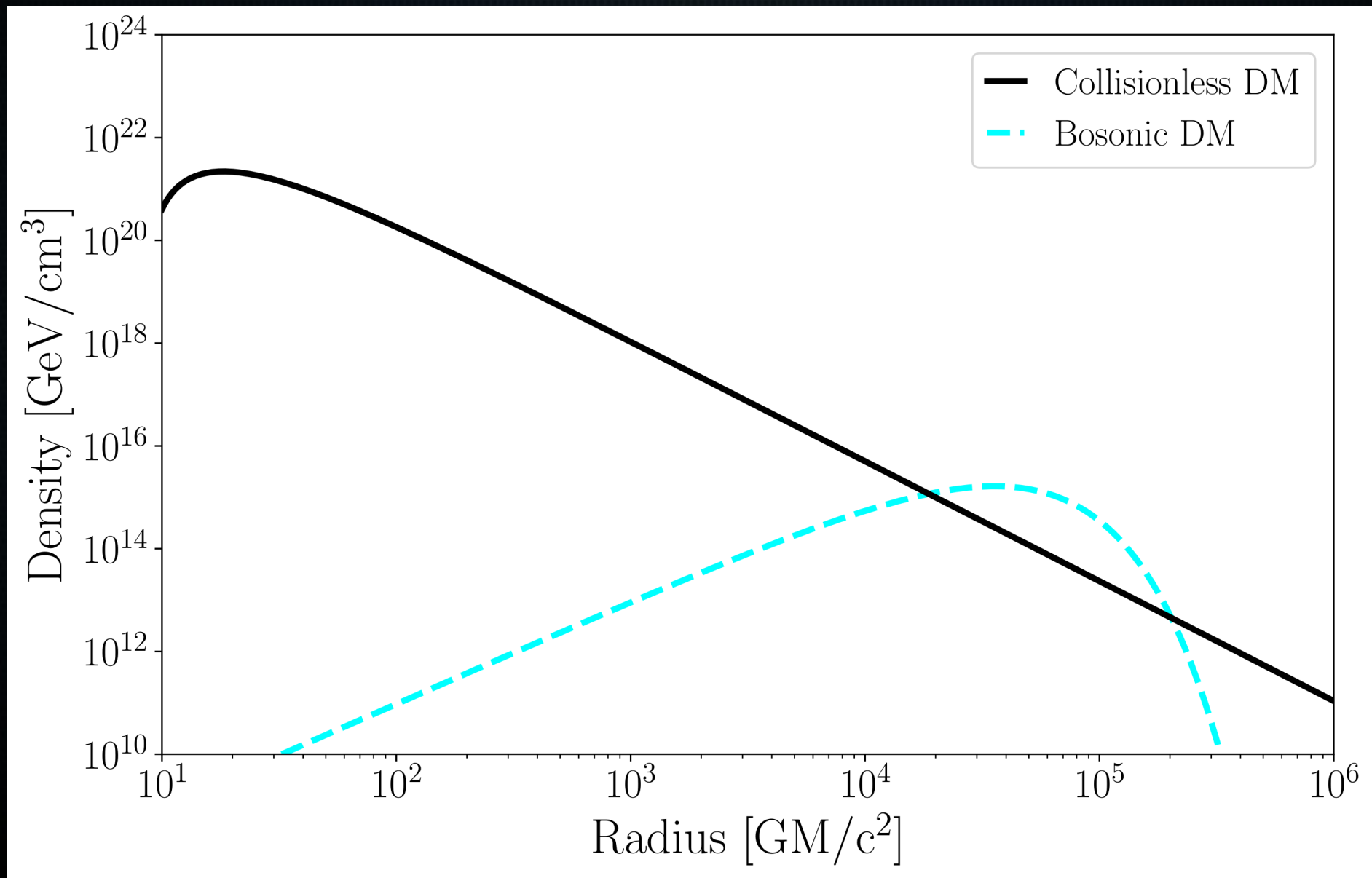


Image credits:NASA

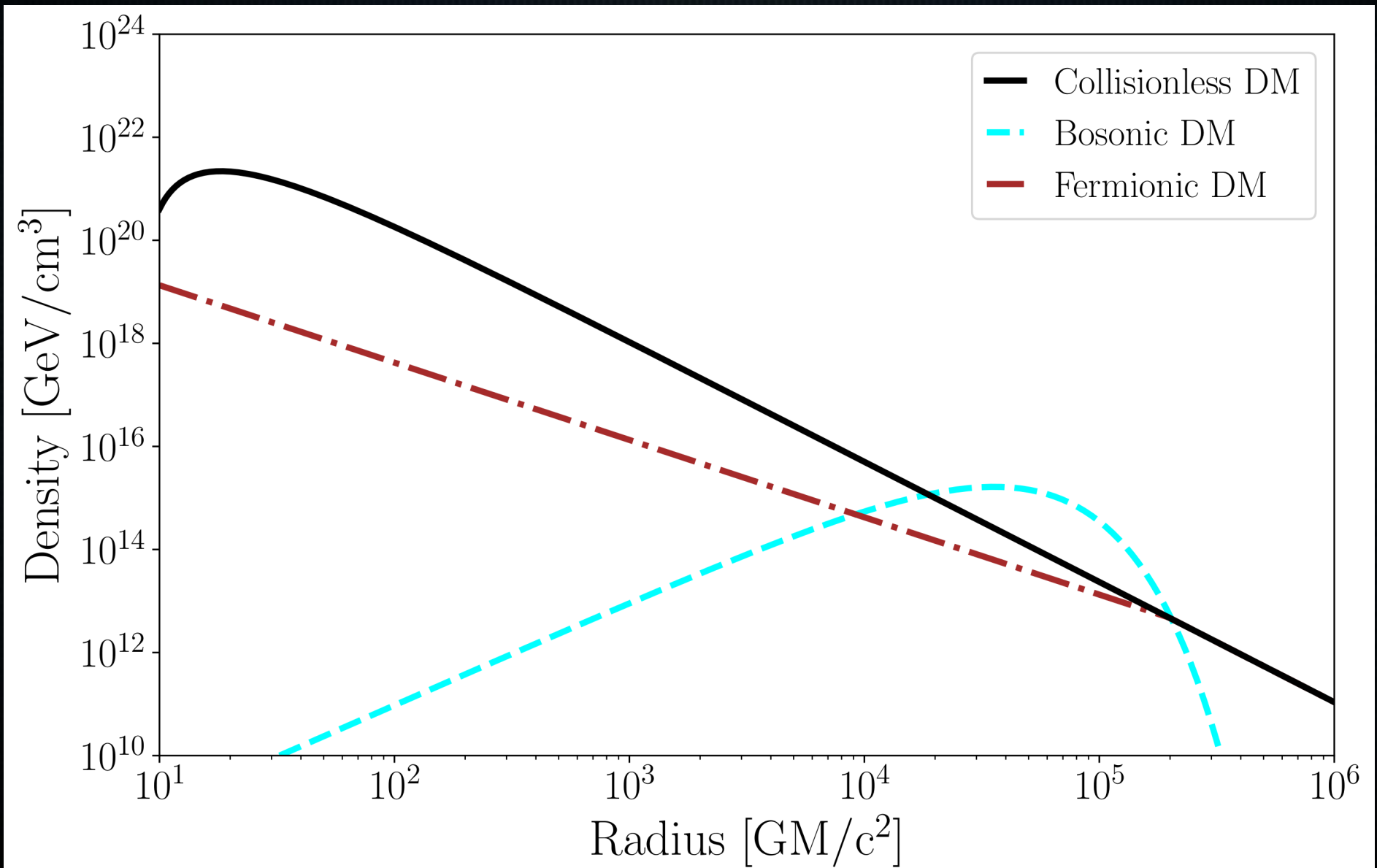
Dark matter spike profile



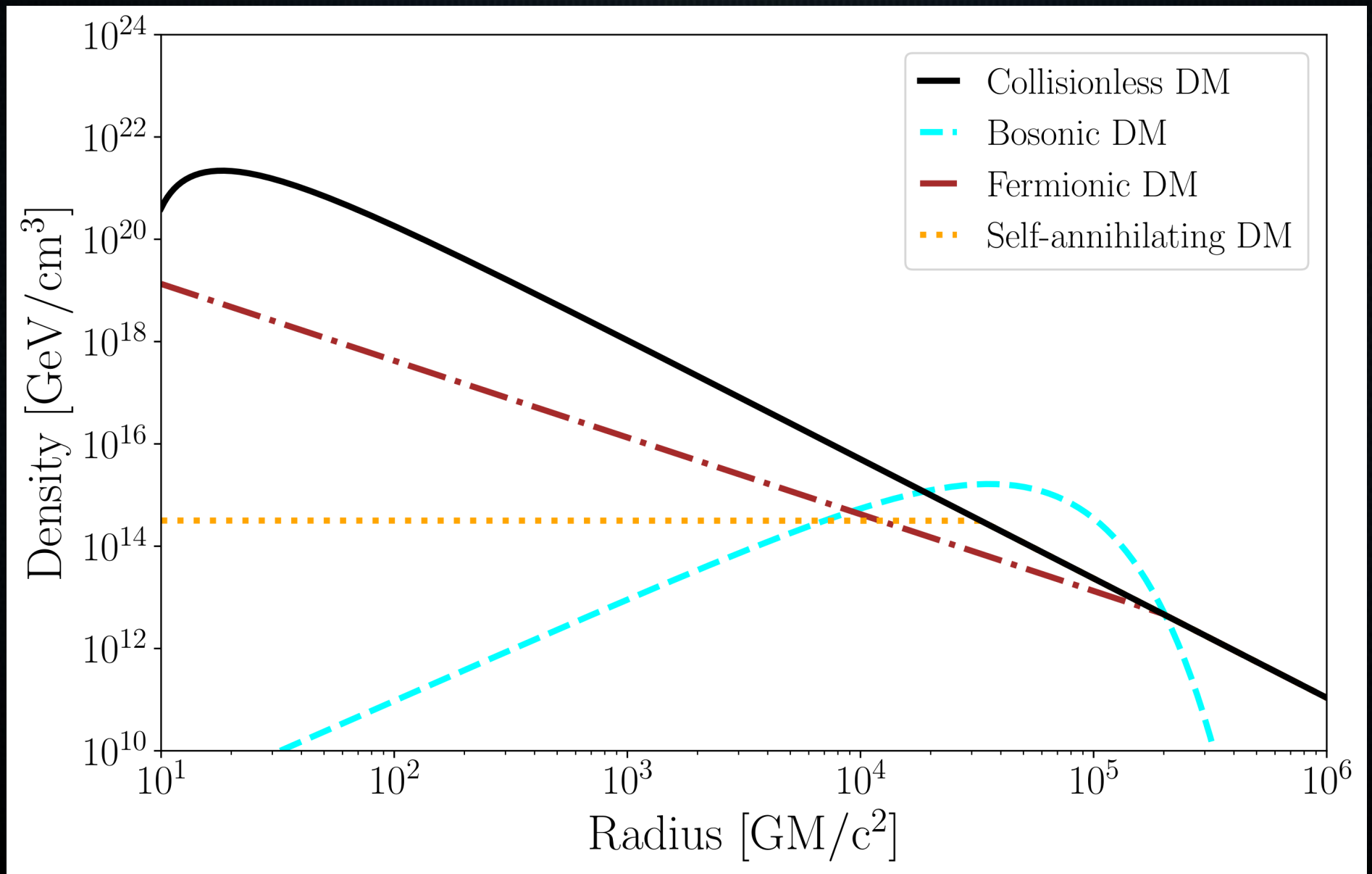
Dark matter spike profile



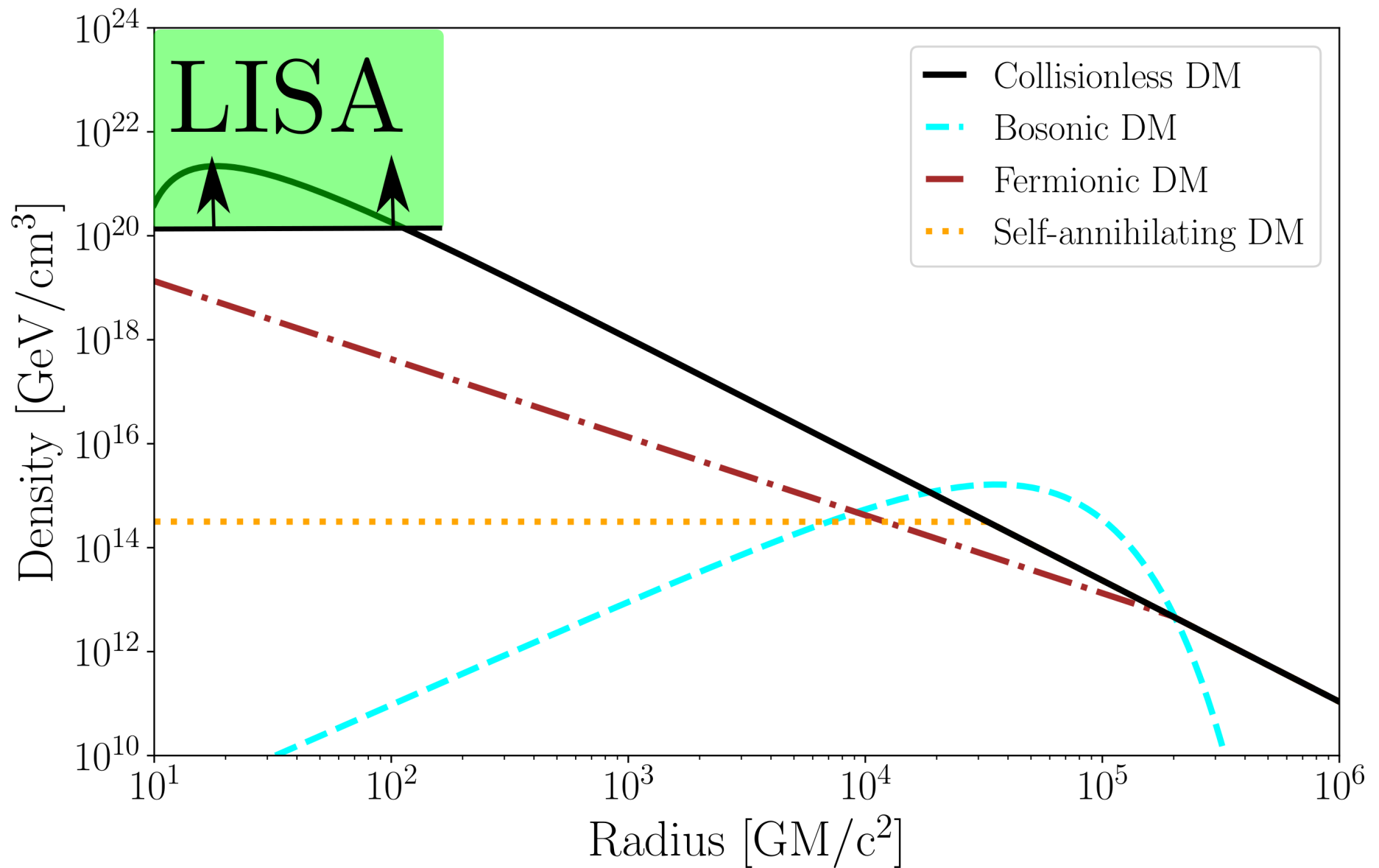
Dark matter spike profile



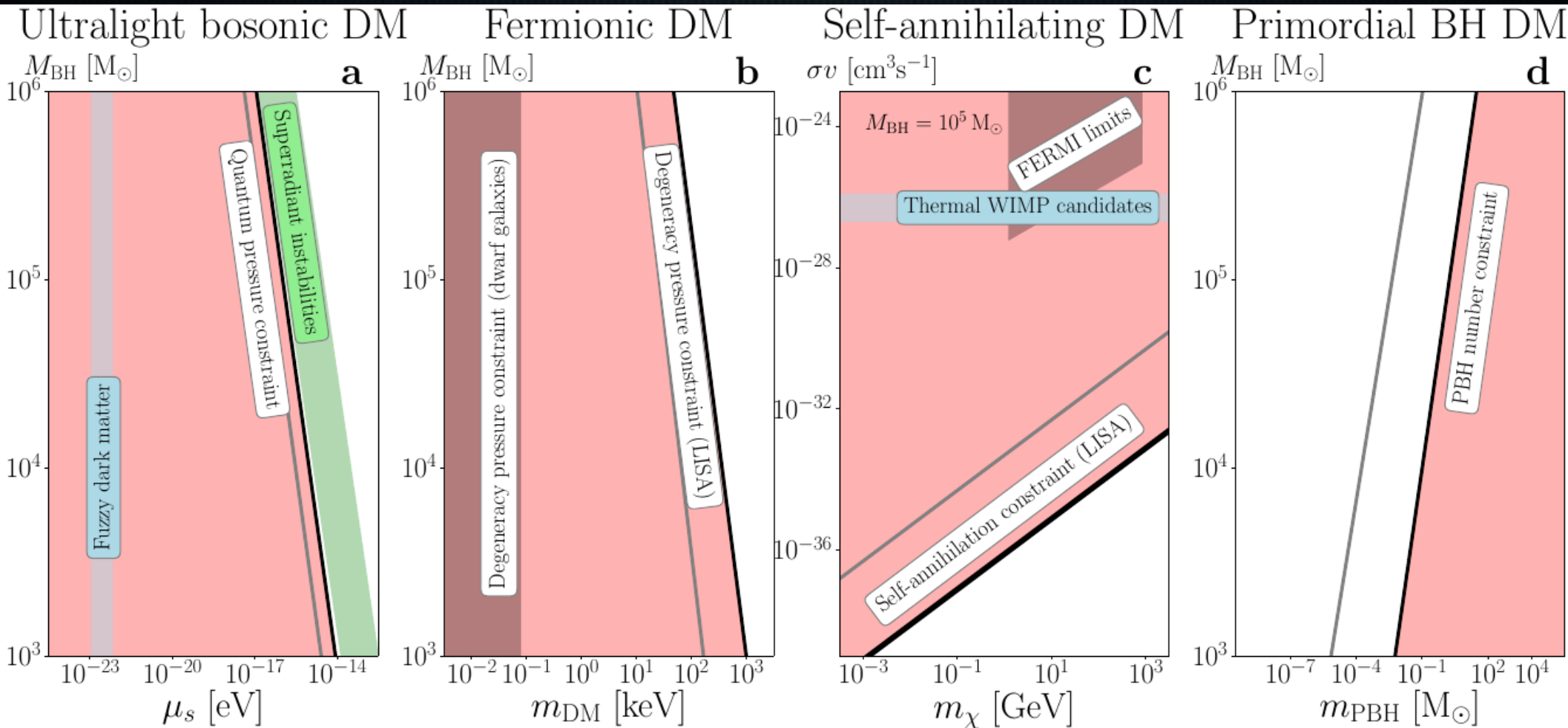
Dark matter spike profile



Dark matter spike profile



Dark matter constraints



Constraints across the mass spectrum

Thank you

[arXiv:1906.11845]

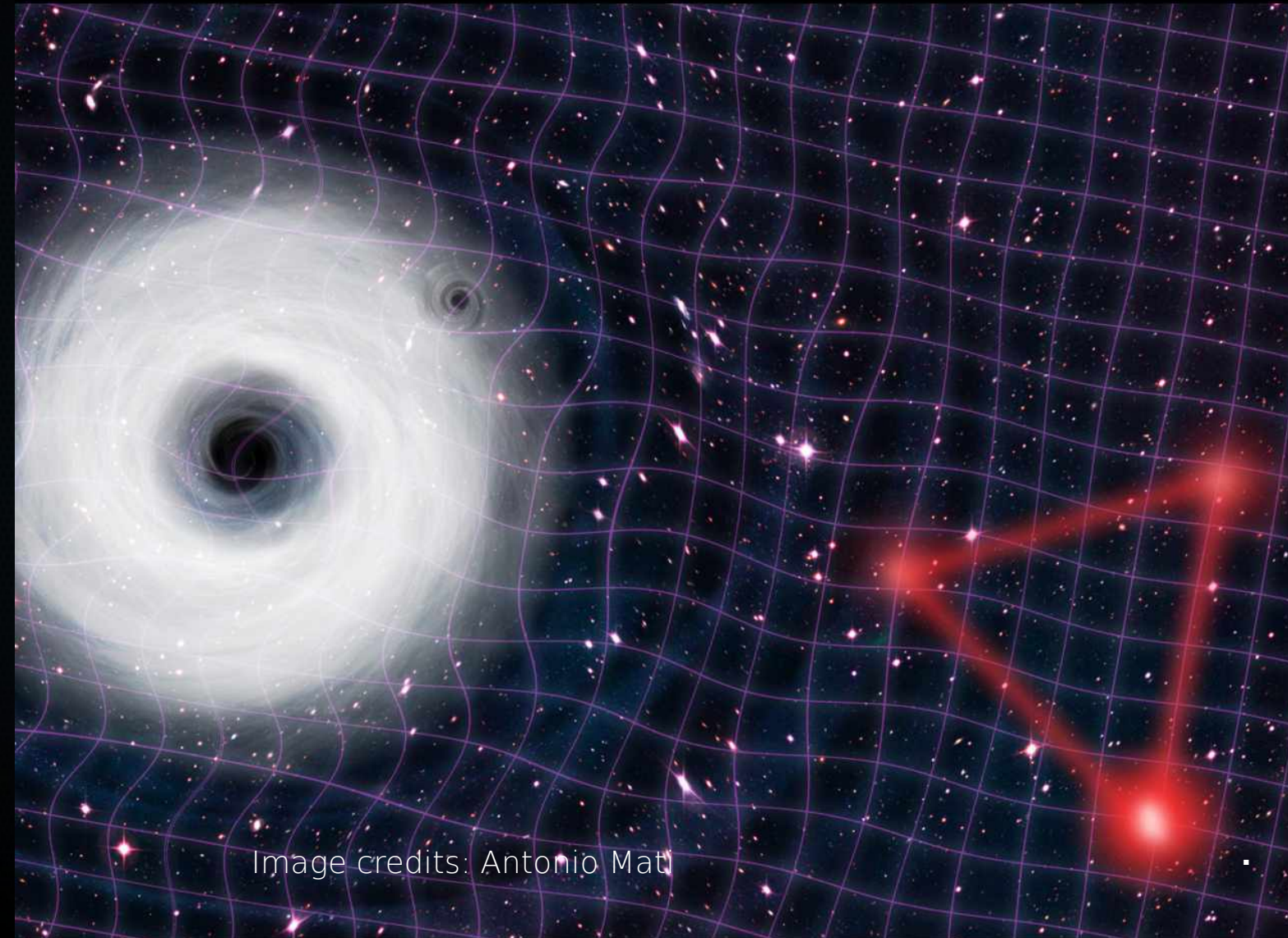


Image credits: Antonio Mat

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