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Where my DAEMON hides – one explanation to rule all lens models

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“A big obstacle to efficiently determine H0 from time-delay cosmography is the lens modelling.
When choosing a mass density profile as lens model, we have to select from a multitude of lens model classes and ranges for the model parameter values. A specific choice may bias the confidence bounds on H0 low, a marginalisation over many model classes and parameter ranges is computationally very intensive.
As a first step towards one general mass density profile that replaces the heuristically inferred fitting function lens models, I will introduce the “”DArk Emergent Matter halO explanatioN”” (DAEMON) which is able to explain the self-similar dark matter halo morphologies forming under scale-free gravitational interaction. DAEMON thus allows us to base the power-law mass density profiles and composites thereof, like the famous Navarro-Frenk-White profile on sound mathematically and physically fundamental principles. Consequently, choosing and marginalising over classes of lens models can be simplified to reduce computational costs and obtain realistic confidence bounds on H0 at the same time.”

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