

# Discussion on Composite Dark Matter

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# Chances to discover compositeness

- New resonances: how to tell their composite nature? Widths, couplings, ...
- Footprints in the low energy effective theory:
  - non-linear EWSB: how to tell weakly- from strongly-coupled realisations?
  - anomalous couplings: hints on the UV (broken) symmetries / fields content
  - ...

# Chances to discover dark matter

- Parameter space for the dark sector is immense
- Only hope are candidates motivated by the visible sector structure (indication: baryon and DM relic densities are close; any other?)
- Candidates related to EWSB:
  - weakly interacting ones
  - ultra-weakly interacting ones
  - help from visible state associated to the dark one?

# Benefits/downsides of compositeness + DM

- Stick to composite sectors including the Higgs
- Dynamical EWSB profits or suffers from including DM/interacting with DM ? Poorly studied ...
- DM profits or suffers from being composite ?
  - symmetries to make DM stable: techni-baryon number, generalised parity, ... but Yukawas break these generically
  - SM-DM Higgs portal under pressure; other natural portals to get the relic density right?
  - astro/cosmo data ask for DM self-interaction/excited states?

Different tracks?

Poorly understood  
issues to explore?