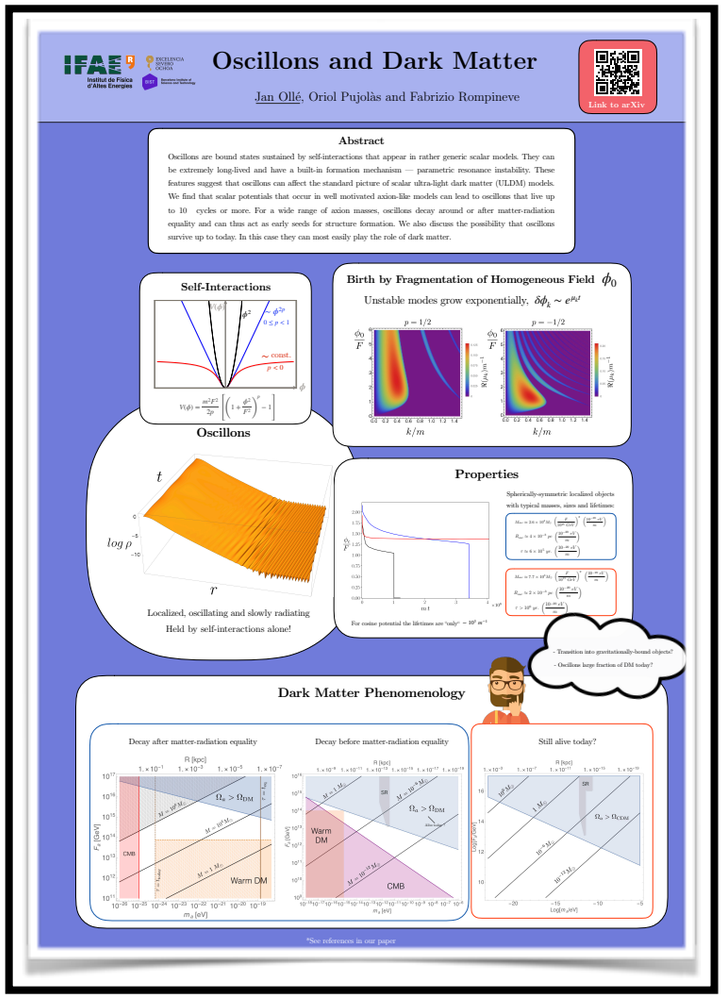
Based on: Jan Ollé, Oriol Pujolàs and Fabrizio Rompineve,
hep-ph/1906.06352

OSCILLONS AND DARK MATTER

Attractive self-interactions

Bound state of a large number of such particles. Heavy and long-lived. Sustained by self-interactions!

(Ultra) light axion-like particles



Cold Dark Matter model with 2 components:

- Ultra light free scalar particles, $m \sim 10^{-20} - 10^{-6}\ eV$
- Much heavier objects (oscillons), $M \sim O(100)\ F^2\ m^{-1}$

$(F = 10^{10} - 10^{15}\ GeV)$

Seeds for structure formation, PBHs …