

## Composite dark matter axion-like particles: Glueball-ALPs

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I will present a composite dark matter framework based on the confinement dynamics of a dark  $SU(N)$  Yang-Mills sector. This theory gives rise to composite bound states, glueballs, that in the absence of fermions serve as dark matter candidates. I will review recent developments in understanding glueball production in the early Universe and delineate the parameter space where they can account for the entirety of dark matter. A particular focus will be placed on a novel class of states: pseudoscalar glueballs with axion-like properties, dubbed Glueball-ALPs (GALPs), bridging the phenomenology of glueballs and axion-like particles, opening new directions for modelling axion-like dark matter.

**Primary author(s) :** Dr CARENZA, Pierluca

**Presenter(s) :** Dr CARENZA, Pierluca

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