



Dark jets signatures
enriched in hadrons/
photons/leptons
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Overview of interests

Dark shower signatures enriched in hadrons/leptons/photons

- We plan to work on a class of **strongly coupled Hidden Valley models** mediated by the Higgs boson and/or ALPs leading to parton showers in the dark sector.
- Experimental signatures: Partially visible, **wide jets signatures enriched in hadrons and/or leptons and/or photons from decays of unstable dark bound states**. Depending on particles lifetime, particles in the jets can appear more or less displaced.
- Work on the model: a **PhD student plus a master student**, timeline Summer
- FCC-ee feasibility study: **master student** starting in September

Tagging algorithms:

- We are also interested in working on jets tagging algorithms based on **Lund Plane jets representation**
- This will be the topic of an additional **master student** starting in September

Detector optimisation with ML

- On the longer timescale we are planning investigating techniques for ML-based detector optimisations

