

Theoretical frameworks for dark matter and the dark sector

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A selection of “theoretical frameworks” that are currently used in the analysis of dark matter (DM) search experiments is presented. These frameworks are divided into two classes: those extending the Standard Model (SM) by a DM candidate only, and those extending the SM by a new particle mediator in addition to a DM candidate (“dark sectors”). For each framework, examples are provided for how it can be used in the interpretation of experimental data. Doing so, the emphasis is placed on the interdisciplinary input from, e.g., particle, nuclear and solid state physics that the use of each framework explicitly requires.

Presenters: CATENA, Riccardo (SISSA); CATENA, Riccatdo

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