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## Multicomponent dark matter and the inert doublet model

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Multicomponent dark matter models are an interesting solution to the challenges that simplified models face under current experimental constraints. The relic abundance is saturated due to the interplay of two or more dark matter candidates that may or may not affect each others relic density. One interesting possibility arises when the two dark matter candidates are part of the inert doublet models and mixed fermionic  $SU(2)_L$  multiplets. In this talk, I will focus on such possibilities and I will show that it is possible to recover the region where the mass of the scalar DM candidate lies below 550 GeV. Moreover, I will show that despite the larger parameter space and the greater difficulties faced by multicomponent dark sectors, it is possible to impose constraints coming from current dark matter searches.

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