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## A portal to the SM for resonant SIMPS

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Strong Interacting Massive Particles are a well motivated DM candidate. In particular we took into consideration a QCD-like theory with three flavours, where the DM candidate is a dark pion. In Ref[2405.10367], it has been found that a non-vanishing theta angle would trigger resonant processes which would give rise to the observed relic density, together with providing velocity dependent self-interactions without a light mediator. In this work, we studied its interactions with SM particles in the case of a dark photon portal, focusing on the thermalizations and the stability issues of the dark pions. In the scenario we considered, a dark pion mass in the window of 10-50 MeV would be consistent with all bounds, and would explain successfully astrophysical observations in the context of SIDM.

**Primary authors:** GARCIA CELY, Camilo (T (Theorie)); Dr LANDINI, Giacomo (IFIC); MARSILI, Luca (IFIC-University of Valencia); Dr ZAPATA, Oscar (Antioquia University)

**Presenter:** MARSILI, Luca (IFIC-University of Valencia)

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