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Upsilon Decays into Scalar Dark Matter

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We examine $\Upsilon(1S)$ meson decay into a pair of scalar Dark Matter particles and $\Upsilon(3S)$ meson decay into a pair of scalar Dark Matter particles and a photon. To the lowest order in perturbation theory, we perform model-independent analysis and derive formulae for the branching ratios of these decays. We confront our calculation results with the experimental data. We do it both in the model-independent way and within particular models. This way we derive constraints on parameters of the models containing light Dark Matter.

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