

750 GeV resonance as portal for Dark Matter

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We will discuss the possibility that the 750 GeV state responsible of the diphoton excess reported by ATLAS and CMS is as well the mediator of the interaction between the SM and a fermionic DM. In the simplest scenario in which the resonance is a scalar or pseudoscalar SM singlet a viable DM is mostly obtained only for a limited range of masses and only for a small decay width of the 750 GeV resonance. The prospects for DM phenomenology are sensitively improved in the case of a scalar resonance as part of a complex field featuring a small pseudoscalar component such that the diphoton signal is actually originated from two pairs of collimated photons.

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Classification de Session: Session