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Hunting the dark Higgs

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I discuss a novel signature of DM production at the LHC resulting from an additional Higgs boson in the dark sector, whose presence is motivated by the need to generate the masses of the dark sector particles and the possibility to relax constraints from the DM relic abundance by opening up a new annihilation channel. If the dark Higgs boson decays into SM states via a small mixing with the SM Higgs boson, one obtains characteristic large-radius jets in association with missing transverse momentum that can be used to efficiently discriminate signal from backgrounds. I present the sensitivities achievable in LHC searches for dark Higgs bosons and show that they can probe regions of parameter space inaccessible to mono-jet or di-jet searches.

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