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Stealth Dark Matter: Model, lattice calculations, and constraints DAVID SCHAICH, Syracuse University, LATTICE STRONG DYNAMICS COLLABORATION — A new strongly coupled dark sector can produce a well-motivated and phenomenologically interesting composite dark matter candidate. I will review a model recently proposed by the Lattice Strong Dynamics Collaboration in which the composite dark matter is naturally "stealthy": Although its constituents are charged the composite particle itself is electroweak neutral with vanishing magnetic moment and charge radius. This results in an extraordinarily small direct detection cross section dominated by the dimension-7 electromagnetic polarizability interaction. I will present direct detection constraints on the model that rely on our non-perturbative lattice calculations of the polarizability, as well as complementary constraints from collider experiments. Collider bounds require the stealth dark matter mass to be $m > 300$ GeV, while its cross section for spin-independent scattering with xenon is smaller than the coherent neutrino scattering background for $m > 700$ GeV.

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