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## When unification freezes dark matter

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Motivated by the absence of WIMP signal in the recent direct and indirect detection searches, we consider a scenario where the breaking of an abelian symmetry generates the annihilation of hypercharge bosons into the Nambu-Goldstone of the theory, the dark matter candidate. The couplings are generated by loops of heavy fermions which masses are also determined by the scale of the  $U(1)$  breaking. In other words, all the parameters of the model are dynamically generated and naturally leads to the right amount of dark matter for a breaking scale of the order of unification scale and a very light Nambu-Goldstone boson at the keV range.

**Auteur principal:** Mlle DUTRA, Máira (Laboratoire de Physique Théorique d'Orsay)

**Orateur:** Mlle DUTRA, Máira (Laboratoire de Physique Théorique d'Orsay)

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