

# Enhancing dark-matter self interaction by a Higgs resonance

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## Summary

A possibility of enhancing the dark-matter self-interaction cross-section ( $\sigma_{\text{self}}$ ) by a Higgs boson resonance is discussed within a model of Abelian vector dark matter. The model assumes extra  $U(1)$  symmetry group factor and an additional complex Higgs field needed to generate a mass for the dark vector boson via the Higgs mechanism. The scalar sector contains an extra neutral Higgs boson  $h_2$ . If  $2M_{DM} \approx M_{h_2}$  then  $\sigma_{\text{self}}$  could be amplified by s-channel resonance and the observed dark matter abundance could be properly reproduced. Consequences of such a scenario will be discussed.

## Based on (arXiv number)

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