

Manifesting hidden dynamics of a sub-component dark matter

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A distinctive cosmological dynamics of a sub-component dark matter will be discussed. The thermal evolution of the sub-component is significantly affected by the sizable self-scattering and the required annihilation cross section of the sub-component sharply increases as we consider a smaller relative abundance fraction among the dark-matter species. Therefore, contrary to a naive expectation, it can be easier to detect the sub-component with smaller abundance fractions in direct/indirect-detection experiments and cosmological observations.

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