

Dark matter and reheating via dark glueballs

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Taking axion inflation as an example, we consider a scenario where the inflaton is coupled solely to a pure SU(3) Yang-Mills sector. In the low-energy phase of this sector, glueball states are formed. If non-renormalizable operators are considered, these glueballs may become unstable and reheat the standard model fields. Yet, for a certain parameter range, C-parity can protect part of the glueball species from decay and the C-odd glueballs can provide a viable dark matter candidate. We study the constraints related to dark matter stability and minimal reheating temperature of the standard model and conclude that this scenario is very predictive.

Alternate track

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Primary authors: KOLEŠOVÁ, Helena (University of Stavanger); PROCACCI, Simona (University of Geneva (CH)); Dr BIONDINI, Simone (University of Basel)

Presenter: KOLEŠOVÁ, Helena (University of Stavanger)

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