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Non-thermally trapped inflation due to the tachyonic instability

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The motion of the axion field explosively produces hidden photons due to the tachyonic instability. We consider the Abelian Higgs model coupled to the hidden photon which leads to the effective mass of the Higgs. When the axion starts to oscillate and the hidden photon are produced, the Higgs is trapped by the effective mass. If the vacuum energy of the Higgs dominates the universe, then the inflation non-thermally occurs in the late-time universe. In this talk, we will present our results and its implication for cosmology.

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