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Multifield D5-brane Inflation in the Throat

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Given the ongoing debate by Vafa et al on inflation and the swampland, I will discuss a multifield D-brane model of inflation consistent with observational bounds. We study the model, which was previously been done as a single field, by focusing on the multifield cosmological evolution of a probe D5 brane moving in both radial and angular directions in the Warped Resolved Conifold (WRC) throat of a type IIB string flux compactification. I will show that the model allows for super planckian decay constants when the brane moves along the angular direction with a cosine potential, consistent with the supergravity approximations. I will show that this can be achieved thanks to the warping, presence of geometrical flux quanta and wrapping number. I will discuss the mass hierarchies between inflatons and other mass scales that are present in this model. I will then show the cosmological observables, n_s, r and f_{NL}^{local} which are consistent with the current Planck-X bounds.

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