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On Warped Heterotic Axion

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Abstract

I'll talk on the axion in a warped heterotic background. I'll show that the axion decay constant, f_a , is sensitive to the warped mass scale of the throat. As an explicit model, I'll demonstrate a novel AdS-like geometry in heterotic string theory. I'll also demonstrate that in this background f_a is given by the mass scale of the longest throat in the compactification. The question of obtaining f_a within the required bound 10^9 – 10^{12} GeV is reduced to the construction of a throat inside the heterotic string theory compactification with warped mass scale in the above range. I'll show that this provides a natural mechanism for realising the axion in heterotic string theory.