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Naturalness of the relaxion mechanism

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The relaxion mechanism is a novel solution to the hierarchy problem that utilizes the dynamics of an axion-like field. I discuss results from the first statistical analysis of the relaxion mechanism (arXiv:1602.03889), in which we quantified the relative plausibility of a QCD and a non-QCD relaxion model versus the Standard Model with Bayesian statistics, which includes an automatic penalty for fine-tuning. We included experimental constraints upon the weak-scale, $\theta_{\rm QCD}$ and inflationary observables measured by Planck/BICEP. Whilst we confirmed that relaxion models could solve the hierarchy problem, we found that their unconventional cosmology demolishes their plausibility.

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