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Title: Mock modularity of Calabi-Yau threefolds

Abstract: String theory predicts that generating functions of rank 0 Donaldson-Thomas invariants, realized physically as D4-D2-D0 BPS indices in type IIA string theory on a Calabi-Yau threefold, are (higher depth) mock modular forms with a specific modular completion. I'll show how the modular anomaly equations can be solved to get the generating functions up to modular ambiguities. The solution is found in terms of indefinite theta series.