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H. Tai Ha and **Brent D Strunk*** (strunk@ulm.edu). *Asymptotic Behavior of Multigraded Regularity Vectors.*

Let S be a standard \mathbb{N}^k -graded polynomial ring over a field \mathbf{k} , let I be a multigraded homogeneous ideal of S , and let M be a finitely generated \mathbb{Z}^k -graded S -module. We prove that the resolution regularity, a multigraded variant of Castelnuovo-Mumford regularity, of $I^n M$ is asymptotically a linear function. This shows that the well known \mathbb{Z} -graded phenomenon carries to the multigraded situation. (Received August 10, 2009)