

Varieties without minimal generators

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While many familiar varieties have a minimal varietal generator, i.e., a regular projective finitely presentable regular generator such that none of its retracts is a regular generator, and even a unique one, we sketch (a) a variety having no minimal varietal generator at all and (b) a variety having two non-isomorphic minimal varietal generators. Moreover we demonstrate that the same effects can happen with respect to a weaker notion of minimality and are common even in module categories.

This shows in particular that a given variety might not have a “simplest” equational representation.

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