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Investigating a Non-simple Generic Structure

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In the context of Hrushovski constructions we take a language \mathcal{L} with a ternary relation R and consider the generic model M_1^* of the class of finite \mathcal{L} -structures equipped with a predimension. The strong embedding is defined by the strict inequality of predimensions.

It is known that $Th(M_1^*)$ is undecidable and has the strict order property and hence is not simple. By interpreting a dense linear order in M_1^* we show that this model does not have finite model property. We also prove that this model admits a quantifier elimination down to closure formulas, a result that could be an asset for further investigations of this model. It seems to the authors that this result could lead to finding good examples for non-simple first order theories or in the context of abstract elementary classes.

This is a joint work with Massoud Pourmahdian.