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Efficiency in F-Theory: FTheoryTools

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FTheoryTools (https://docs.oscar-system.org/stable/Experimental/FTheoryTools/introduction/) is an in-development component of the OSCAR computer algebra system (https://www.oscar-system.org/).
The goal is to automate tedious computations in the field of F-theory.

Among others, a large database of existing models from the literature is included (in compliance with the established MARDI standard: https://www.mardi4nfdi.de/about/mission). Thereby, complicated geometries underlying constructions from the literature can be created with the click of a button.

Recall also that non-trivial F-theory vacua are defined by singular geometries, which are currently best understood by crepantly resolving the singularities. Among its many features, FTheoryTools allows executing such resolutions.

I will provide an overview of FTheoryTools and how it can be used to facilitate and simplify future F-theory research.

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