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Generalized Mordell curves, generalized Fermat curves, and the Hasse principle

We show that for each prime p congruent to 1 (mod 8), there exists a threefold $\mathcal{X}_p$ in $\mathbb{P}^6$ such that the existence of certain rational points on $\mathcal{X}_p$ produces families of generalized Mordell curves and of generalized Fermat curves that are counterexamples to the Hasse principle explained by the Brauer–Manin obstruction. We also introduce a notion of the descending chain condition (DCC) for sequences of curves, and prove that there are sequences of generalized Mordell curves and of generalized Fermat curves satisfying DCC.