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An obstruction to weak approximation on some Calabi-Yau threefolds

There has been recent interest in whether existence and density of \mathbb{Q} -rational points is preserved under derived equivalence. After giving a short introduction to this question, I will be discussing recent work joint with Hashimoto, Lamarche and Vogt in which we examine \mathbb{Q} -points on a family of derived equivalent Calabi-Yau threefolds. These threefolds were constructed and analyzed in detail as complex varieties by Hosono and Takagi in the context of mirror symmetry. One family of threefolds occurs as a linear section of a double quintic symmetroid, and we are able to give a general condition under which a Brauer class obstructs weak approximation, though it cannot obstruct the existence of \mathbb{Q} -rational points.