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Sarah Frei* (sarah.frei@rice.edu). *Rational points and derived equivalence.*

In this talk, I will consider the question: is the existence of a rational point preserved under derived equivalence? In recent joint work with Nicolas Addington, Ben Antieau, and Katrina Honigs, we show that over \mathbb{Q} , the answer is no. We give two counterexamples: an abelian variety and a torsor over it, and a pair of hyperkaehler fourfolds. The hyperkaehler fourfold without rational points, which is a moduli space of sheaves on a K3 surface, has a Brauer-Manin obstruction. I will also report on ongoing work with Ryan Takahashi, in which we explore Brauer obstructions to rational points on other hyperkaehler fourfolds. (Received August 18, 2020)