1131-11-363 **Jennifer Berg*** (`jb93@rice.edu`). *Brauer Manin obstruction to integral points on affine Châtelet surfaces.*

In 1970, Manin showed that the Brauer group can obstruct the existence of rational points on varieties, even when there exist points everywhere locally. In 2009, Colliot-Thélène and Xu showed that the Brauer group is in fact relevant for obstructions to integral points on non-proper varieties as well. In this talk, we consider this obstruction to S-integral points for affine Châtelet surfaces over a number field defined by an equation of the form $x^2 - ay^2 = P(t)$, where $P(t)$ is an irreducible, separable polynomial and a is not a square. We show that, unlike their smooth proper compactifications, these affine surfaces can have Brauer groups that are neither generated by quaternion algebras nor their higher dimensional generalizations. Moreover, we show that the Brauer-Manin obstruction does not explain the failure of the existence of integral points for a family of surfaces that have $\mathbb{Z}_p$ points for all p and even points over $\mathbb{Q}$. (Received July 18, 2017)

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