

Brauer-Manin obstruction for Markoff surfaces

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Abstract. Ghosh and Sarnak have studied integral points on surfaces defined by an equation $x^2 + y^2 + z^2 - xyz = m$ over the integers. For these affine surfaces, we systematically study the Brauer group and the Brauer-Manin obstruction to the integral Hasse principle. We prove that strong approximation for integral points on any such surface, away from any finite set of places, fails, and that, for $m \neq 0, 4$, the Brauer group does not control strong approximation.

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