

Abstract: Computing the Brauer group of a variety given by an explicit equation is usually difficult. In this talk I will sketch a proof of the following result: the Brauer group of the generic diagonal surface of degree  $d$  is trivial. The proof is a long exercise in group cohomology, based on the knowledge of the Hodge structure of the Fermat surface and explicit description of differentials of a standard spectral sequence. This is joint work with Damian Gvirtz.