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Brauer pairs and terminal resolutions

Given a quasi-projective variety X and an element α in the 2-torsion part of the Brauer group of the function field of X, the pair (X, α) is called a *Brauer pair*. There is a notion of *discrepancy* of a Brauer pair which is similar to the notion of discrepancy of a logarithmic pair that one encounters in Mori's minimal model program. (We will discuss this notion in the talk.) A Brauer pair is called a *terminal pair* if its discrepancy is positive.

If there is a birational morphism $f\colon Y \longrightarrow X$ then we can view an element α in the Brauer group $\mathrm{Br}\big(k(X)\big)$ of the function field $k(X)$ as an element in $\mathrm{Br}\big(k(Y)\big)$ via the isomorphism $f^*\colon k(X) \longrightarrow k(Y)$. We will show that given a Brauer pair (X, α) with X 3-dimensional, there is a terminal pair (Y, α) with a birational morphism $f\colon Y \longrightarrow X$. In other words, every 3-dimensional Brauer pair admits a terminal resolution.