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*Cohomological Obstructions to Quadratic Pairs over Schemes.*

The concept of quadratic pair was introduced by Knus, Merkurjev, Rost, and Tignol in *The Book of Involutions* to work with quadratic forms and groups of type D in characteristic 2. This notion was generalized by Calmés and Fasel to the setting of Azumaya algebras over an arbitrary base scheme, also with groups of type D in mind. We will review these definitions before discussing recent work with Philippe Gille and Erhard Neher. We define two cohomological obstructions attached to an Azumaya algebra with orthogonal involution. The weak obstruction prevents the existence of a quadratic pair, and the strong obstruction prevents potential quadratic pairs from being described as in the field/ring case. Interestingly, both these obstructions are trivial over affine schemes, and so quadratic pairs have noticeably different behaviour when working over arbitrary schemes. To demonstrate that this behaviour is possible, we will also present examples where one or both obstructions are non-trivial.