

## **Pfister, round and group forms**

**Abstract.** Pfister forms, introduced by Albrecht Pfister in the mid sixties, remain the most fundamental objects in the algebraic theory of quadratic forms. Ernst Witt subsequently defined the notion of round forms, those that are invariant under scaling by their values, and applied them to simplify some of Pfister's work. The concept of group forms, whose value sets are multiplicative groups, is more general still. The relations between these three classes of forms has been studied, but questions remain. We will characterise round and group forms, in terms of multiples of Pfister forms, and apply these results to distinguish between these classes of forms. We will highlight some recent results on multiples of Pfister forms, and apply them to reprove some classical results in the theory.