Orthogonal Modular Forms and Lattices via p-neighbouring graphs on class sets

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We investigate the local structure of ternary quadratic lattices L of half-discriminant an odd prime squared. A theorem on even lattices will be presented and explored with an example, showing transformations that do not increase class numbers. The theory of isometry classes and genus of L will also be introduced, leading to the notion of p-neighbours and their directed graphs. In particular, we will focus on the Hecke-equivariant isomorphism between the spaces of orthogonal modular forms of level $O(\hat{L})$ and classical modular forms. Insights towards current work on odd lattices will be mentioned, too.

(Joint work with Dan Fretwell)