Representing numbers by ternary quadratic forms

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Abstract. In 1990 Duke and Schulze-Pillot showed that outside of finitely many "exceptional" square classes, any sufficiently large number which satisfies certain local conditions is represented a positive definite ternary quadratic form Q. We explain some recent work which precisely describes the numbers represented within these exceptional square classes. This together with the work of Duke and Schulze-Pillot completely characterizes all sufficiently large numbers represented by Q.