Cubic surfaces over finite fields
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Serre has asked what are the possibilities for the number of rational points a cubic surface can have over any given finite field. In this talk, we shall give a complete answer to this problem, building on special cases treated by Swinnerton-Dyer.

Depending on time, we shall also discuss other existence problems concerning del Pezzo surfaces over finite fields.

This is joint work with Barinder Banwait and Francesc Fite.