Algebraic points of fixed degree on a variety.

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Let A be an abelian variety over a number field K. We investigate the behaviour of the rank of A in field extensions L/K of fixed degree. We do this by studying algebraic points of fixed degree on A. For elliptic curves, we present a result of da Costa. He proved that, for any integer m>1, the rank of an elliptic curve E/K increases in infinitely many degree m extensions L/K.