Rationality of homogeneous varieties
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Let G be a connected linear algebraic group over an algebraically closed field k, and let H be a connected closed subgroup of G . We prove that the homogeneous variety G/H is a rational variety over k whenever H is solvable, or when $\dim(G/H) < 11$ and $char(k) = 0$. When H is of maximal rank in G , we also prove that G/H is rational if the maximal semisimple quotient of G is isogenous to a product of almost-simple groups of type A , type C (when $char(k) > 2$), or type $B3$ or $G2$ (when $char(k) = 0$). This is a joint work with C. Chin.