

STRONG APPROXIMATION FOR THE TOTAL SPACE OF CERTAIN QUADRIC FIBRATIONS

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The Chinese Remainder Theorem represents the first case of strong approximation. For semi-simple simply connected linear algebraic groups, the strong approximation theorem was established by Eichler, Kneser, Shimura, Weil, Platonov, Prasad, etc. It need not hold for groups which are not simply connected, but one may establish the strong approximation with Brauer-Manin obstruction which refines the original one. Recently, progress for strong approximation with Brauer-Manin obstruction for various linear algebraic groups and their homogeneous spaces has been made by Colliot-Thelene and Xu, Harari, Borovoi and Demarche, Wei and Xu. Very little has been done for varieties which are not homogeneous spaces. In this talk we'll explain the strong approximation property for affine equations of the shape

$$q(x_1, \dots, x_n) = p(t)$$

where q is a quadratic form of rank n in $n \geq 3$ variables and $p(t) \neq 0$ is a polynomial. The case $n = 3$ is the only serious one.

This is the joint work with Colliot-Thelene.