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THEMATIC PROGRAM
“RATIONAL POINTS, RATIONAL CURVES AND ENTIRE HOLOMORPHIC CURVES ON ALGEBRAIC VARIETIES”
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Geometric invariant theory and Roth’s theorem

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We present a new proof of Thue–Siegel–Roth’s Theorem (and its more recent variants, such as those of Lang–Wirsing for number fields and that “with moving targets” of Vojta) as an application of Geometric Invariant Theory (GIT). Roth’s Theorem is deduced from a general formula comparing the height of a semi-stable point and the height of its projection on the GIT quotient. In this setting, the zero estimates appearing in the classical proof correspond to the semi-stability of the point to which we apply the formula.

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