A Riemann-Roch formula for the blow-up of a nonsingular affine scheme. (English)
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From the abstract: The main purpose of this paper is to obtain the Hilbert-Samuel polynomial of a module via blowing-up and applying intersection theory rather than employing associated graded objects. The result comes in the form of a concrete Riemann-Roch formula for the blow-up of a nonsingular affine scheme at its closed point. To achieve this goal, we note that the blow-up sits naturally between two projective spaces, one over a field and one a regular local ring, and then apply the Grothendieck-Riemann-Roch Theorem to each containment.

Reviewer: Vincenzo Di Gennaro (Roma)

MSC:
14C40 Riemann-Roch theorems
14M10 Complete intersections

Keywords:
Riemann-Roch Theorem; Hilbert-Samuel polynomial; Blow-up

Full Text: DOI

References:

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