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The Aluffi Algebra: Torsion-freeness

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Abstract: The Aluffi algebra is an algebraic version of the characteristic cycle in intersection theory. There is a natural surjective homomorphism from the Aluffi algebra to the corresponding Rees algebra. The kernel of such a homomorphism is the Valabrega-Valla module. In this talk, I will discuss and assay the structure of the Aluffi algebra and the vanishing of the module of Vallabrega-Valla for some classes of ideals and projectively embedded curves.