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38677-1848, and **Florian Enescu**. *Some Properties of Intersection Algebras*. Preliminary report.

We continue the work begun by F. Enescu and S. Malec on intersection algebras. Specifically, when  $R$  is a polynomial ring in finitely many variables over a field and  $I$  and  $J$  are principal monomial ideals, we study  $\mathcal{B}_R(I, J) = \bigoplus_{r,s \in \mathbb{N}} I^r \cap J^s$ . Our aim is to calculate the Hilbert-Samuel and Hilbert-Kunz multiplicities, the divisor class group, and the  $F$ -signature of  $\mathcal{B}$ . (Received January 17, 2016)