

THE DEDEKIND-MERTENS FORMULA FOR POWER SERIES RINGS

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In 1892, Dedekind and Mertens independently proved a formula which relates the content ideals of two polynomials with the content ideal of their product. This formula can be considered to be a generalization of Gauss's Lemma to arbitrary rings of coefficients. An analogue for power series was long believed to be false and a counterexample was known even over a ring $k[X, Y]$. Recently, this counterexample was found to be wrong by N. Epstein and J. Shapiro who in fact managed to successfully extend the Dedekind-Mertens formula to power series. In my talk, I will discuss some related results and give a negative answer to a question posed by Epstein-Shapiro.