

**ICM-9111-21** Coefficient Bounds and Polynomial Factorization, Vilmar Trevisan, Bernard Beuzamy and Paul S. Wang.

**ABSTRACT:** A new coefficient bound is established for factoring univariate polynomials over the integers. Unlike an overall bound, the new bound is a quantity that limits the size of the coefficients of a single factor when the given polynomial is reducible. The bound is derived using the weighted norm introduced in Beuzamy et al. (1990) and is almost optimal. Effective use of the bound in p-adic lifting results in a more efficient factorization algorithm. Experimental results are also presented.