

# Factorization of sparse polynomials

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I will present an algorithm that, given a bivariate polynomial  $f \in Q[x, y]$ , computes all its irreducible factors of degree  $\leq d$  together with their multiplicities. The algorithm runs in time polynomial in  $d$  and in the bit length of the sparse encoding of  $f$  (the list of non- zero coefficients of  $f$  and corresponding exponents). A variant of this algorithm also allows to compute the factors in  $\overline{Q}[x, y]$  which are not binomials. These results are a consequence of recent lower bounds for the height of points in a curve. This is joint work with Martin Avendaño and Martin Sombra.