

ERRATA:
**COMPUTING ZETA FUNCTIONS OF NONDEGENERATE
 HYPERSURFACES WITH FEW MONOMIALS**

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This note gives some errata for the article *Computing zeta functions of nondegenerate hypersurfaces with few monomials* [1], with thanks to David Harvey.

- (1) Theorem B, and page 28, just before section 5: min should be max!
- (2) Page 4, paragraph 3, line -2, “Our method can be analyzed on dense input ... running in time $\tilde{O}(p^{2n}v^{2n+4} \log^{2n+2})$ ”: Should be $\log^{2n+2} q$.
- (3) The definition (1.9)

$$f_i = x_i \frac{\partial x_0 f}{\partial x_i}$$

is used throughout. We let $w = x_0$. On page 9, and in several other places in the text, we write wf_i and this is incorrect; it should be f_i , as in this definition we have already multiplied by $w = x_0$.

- (4) Below Remark 2.10, the formula for K is missing a minus sign: it should be

$$K = K(d, \mu) = \{e : Ue \equiv -(d, \mu)^t \pmod{p}\} \subseteq (\mathbb{Z}/p\mathbb{Z})^s.$$

- (5) Before Lemma 4.8, we bound the inverse roots as having absolute value $\leq q^{n/2}$. In fact, these theorems give a bound $\leq q^{(n+1)/2}$ for the characteristic polynomial $\det(1 - (A_0)_a T)$ (we have $n + 1$ variables) and removing the factor q^{-1} gives $\leq q^{(n-1)/2}$. This only helps the bound and does not change the asymptotic for the running time.

REFERENCES

- [1] Steven Sperber and John Voight, *Computing zeta functions of nondegenerate hypersurfaces with few monomials*, LMS J. Comp. Math. **16** (2013), 9–44.