Jacques MARTINET February 1st, 2013

Comment and erratum to

Formes quadratiques et extensions en caractéristique 2

by Anne-Marie BERGÉ and Jacques MARTINET,

Ann. Inst. Fourier **35,2** (1985), 57–77.

One comment. This paper was intended to consider additive discriminants attached to a basis $\mathcal{B}$ in a finite extension L/K in characteristic 2, not merely in $K/\wp K$, in analogy with Kummer theory in characteristic not 2, where $d_{L/K}(\mathcal{B})$ exists in K^*, not merely in K^*/K^{*2}. A construction only modulo $\wp K$ can be done in a much shorter way.

Erratum.

• In Remark 4.8, page 76, we have listed the Arf invariants of polynomials of degree up to 5, indeed only reduced polynomials

$$X^5 + bX^3 + cX^2 + dX + e$$

in degree five (which does not matter a great deal since in odd degrees n, we can get rid by translation of the term in X^{n-1}). In the numerator of the formula for degree 5 the term bc^3de has disappeared during the editing process. This error was discovered by Jean-Yves DEGOS when writing its PhD thesis "Classes caractéristiques de représentations galoisiennes et invariants d'algèbres étales sur un corps de caractéristique 2" (Bordeaux, October 9th, 2000); see Remark 2.2.6., p. 63. The correct formula is

$$\mathrm{Arf}_p \equiv \frac{b^3c^2d^2 + c^4d^2 + c^5e + bc^3de + b^5e^2 + b^3de^2 + e^4 + bce^3}{(e^2 + bce + c^2d)^2}\,.$$

[Degos has published one paper extracted from his thesis, namely *On multiplicative transfers in singular and Galois cohomologies*, Math. Proc. Cambridge Philos. Soc. **136** (2004), 443–463, however not relevant for our purpose.]

• The complete reference for [12] is:

J.-P. Serre, *L'invariant de Witt de la forme* $\mathrm{Tr}(x^2)$, Comm. Math. Helvet. **59** (1984), 651–676, = Œuvres, t. III, n° 131, pp. 675–700.