Erratum

0.11 Remarks

(ii) The isomorphism between the irreducible representations is

$$\mathrm{ind}_B^G(\chi_1 \otimes \chi_2) \simeq \mathrm{ind}_B^G(\chi_2|?|_F \otimes \chi_1|?|_F^{-1}).$$

In the paper, χ_1 and χ_2 have not been inverted on the right side.

(iv) The integrality condition on the exponents of $(V_{sm})_N \otimes V_{alg}^N$ is that the exponents multiplied by the inverse $\delta^{-1} = |?|_F^{-1} \otimes |?|_F$ of the modulus δ of B are integral on

$$\begin{pmatrix} p_F & 0 \\ 0 & 1 \end{pmatrix}$$

which contracts N [E] lemma 1.6. The integrality condition on the exponents of $\mathrm{ind}_B^G(\chi_1 \otimes \chi_2) \otimes \mathrm{Sym}^k \otimes |\det(?)|_F^{k/2}$ is $\chi_1(p_F)\chi_2(p_F)$ is a unit and

$$\chi_2(p_F)q^{k/2},\ \chi_1(p_F)q^{1+k/2} \ \text{ are integral.}$$

In the paper, p_F and 1 have been inverted in the matrix and k has been replaced by $-k$.

The theorem 0.10 given for moderately ramified principal series does not extend to locally algebraic representations because the exponents of the reducible representation $\mathrm{ind}_B^G 1 \otimes \mathrm{Sym}^k \otimes |\det|_F^{k/2}$ satisfy the integrality condition and this representation is not integral because it contains the representation $\mathrm{Sym}^k \otimes |\det|_F^{k/2}$ which is not integral.

Corollary 0.5 and **1.8 Proof of the corollary 0.5**

In the paper one says and one “proves” that the contragredient respects integrality for a locally algebraic representation of finite length. This is false in general. A counter-example is the reducible representation

$$\mathrm{ind}_B^G(|?|_F \otimes |?|_F^{-1}) \otimes \mathrm{Sym}^k \otimes |\det|_F^{k/2}$$

for a positive integer $k > 0$. This representation is integral (Berger-Breuil: Sur quelques représentations potentiellement cristallines de $GL_2(Q_p)$ Corollaire 5.3.4) but the contragredient representation

$$\mathrm{ind}_B^G 1 \otimes \mathrm{Sym}^k \otimes |\det|_F^{k/2} \otimes (\det(?)|\det(?)|)^{-k}$$

is not integral.

The integrality condition on the exponents of $\mathrm{ind}_B^G(\chi_1 \otimes \chi_2) \otimes \mathrm{Sym}^k \otimes |\det(?)|_F^{k/2}$ is the same than the integrality condition on the exponents of the contragredient $\mathrm{ind}_B^G(\chi_1^{-1}|?|_F \otimes \chi_2^{-1}|?|_F^{-1}) \otimes \mathrm{Sym}^k \otimes |\det|_F^{k/2} \otimes (\det(?)|\det(?)|)^{-k}$.

It is possible for an irreducible locally algebraic representation, the integrality condition on the exponents is equivalent to the integrality of the representation, and that the contragredient respects integrality.