"LEVEL ONE ALGEBRAIC CUSP FORMS OF CLASSICAL GROUPS OF SMALL RANK"

Some remarks and corrections

1. Corrections

p. 51, statement of Lemma 4.5 of Chapter 4. Both $G(\mathbb{A}_f)$ (resp. $G'(\mathbb{A}_f)$) in the diagram have to be replaced by $G(\widehat{\mathbb{Z}})$ (resp. $G'(\widehat{\mathbb{Z}})$).

p. 52, last assertion before the statement of Corollary 4.8 (and a couple of times after). The multiplicity one theorem for SL_2 is not due to Labesse and Langlands, as claimed, but to Ramakrishnan : see Theorem 4.1.1 of [RAMa] (we thank J.-P. Labesse for pointing this out to us).

p.65, line -14, the displayed formula should be $m(V) = \dim V^{\mathrm{W(E_8)}}$.

p.71, line -8, the displayed formula should be $m(\underline{w}) = m'(\underline{w})$.

2. Remarks and update

About assumption *. The stabilization of the twisted trace formula has recently been completed in a series of works by Moeglin and Waldspurger : see [MW, W]. As a consequence, the statements of Arthur's book, as well as the statements of the book here with a single star, are now unconditionnal.

About assumption **. Conjecture 3.20 on p. 43 has recently been proved by Taïbi in [TAÏb], relying in particular on recent work of Kaletha [Ka, Kb, Kc] and of Arancibia-Moeglin-Renard [AMR]. As consequence, all the statements of the book with a double star, are now unconditionnal as well.

p. 7. Tsushima's formula has been proved to hold for all odd couples (w, v) with $w > v \geq 1$, and $(w, v) \neq (3, 1)$ indepently by Taïbi [TAÏa] and Petersen [P].

The computations of this book have been greatly extended by Taïbi in [TAÏa], by using Chevalley groups rather than definite groups over $\mathbb{Z}$. Taïbi has solved *loc. cit.* the main Problem 1 of the introduction up to the dimension $n = 15$.

p. 53. Proposition 4.9 has also been proved (in greater generality) by Ramakrishnan in [RAMb][Thm. A].

References

[AMR] N. Arancibia, C. Moeglin & D. Renard, *Paquets d'Arthur des groupes classiques et unitaires*, available at `http://arxiv.org/abs/1507.01432` (2015).

[Ka] T. Kaletha, *Global rigid inner forms and multiplicities of discrete automorphic representations*, available at `https://web.math.princeton.edu/~tkaletha/` (2015).

[Kb] T. Kaletha, *Rigid inner forms of real and p-adic groups*, available at `https://web.math.princeton.edu/~tkaletha/` (2015).

[Kc] Y. Kaletha, *Rigid inner forms vs isocrystals*, available at `http://arxiv.org/abs/1502.00650` (2015).

[MW] C. Moeglin & J.-L. Waldspurger, *Stabilisation de la formule des traces tordue* VI & X, available at `http://webusers.imj-prg.fr/~jean-loup.waldspurger/` (2015).

[P] D. Petersen, *Cohomology of local systems on the moduli of principally polarized abelian surfaces*, available at `http://arxiv.org/abs/1310.2508`.

[Taïa] O. Taïbi, *Dimensions of spaces of level one automorphic forms for split classical groups using the trace formula*, available at `http://arxiv.org/abs/1406.4247` (2014).

[Taïb] O. Taïbi, *Arthur's multiplicity formula for certain inner forms of special orthogonal and symplectic groups*, available at the address `http://arxiv.org/abs/1510.08395` (2015).

[RAMa] D. Ramakrishnan, *Modularity of the Rankin-Selberg L-series, and multiplicity one for* SL(2), Annals of Math. 152 (2000).

[RAMb] D. Ramakrishnan, *An exercise concerning selfdual cuspforms on* GL(3), Indian J. Pure Appl. Math 45, 777-785 (2014).

[W] J.-L. Waldspurger, *Stabilisation de la formule des traces tordue* I, II, III, IV, V, VII, VIII, IX, available at `http://webusers.imj-prg.fr/~jean-loup.waldspurger/` (2015).