Big image of modular Galois representations associated with p-adic families of bounded slope

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Recent results by H. Hida and J. Lang assert that the image of the Galois representation associated with an ordinary, non-CM family of modular forms, defined over a profinite ring $\mathbb{I}$, contains a congruence subgroup of $\mathrm{SL}_2(\mathbb{I}_0)$ for a suitable subring $\mathbb{I}_0 \subset \mathbb{I}$. I will present a joint work with A. Iovita and J. Tilouine in which we obtain a generalization of these results to the context of finite slope families. As in the work of Hida we can interpret the level of the Galois image in terms of the CM points of the family. I will also briefly discuss generalizations to the groups GSp_{2g}, for which the $g = 2$, ordinary case has been studied by Hida and Tilouine.

References

[1] J. Lang, *On the image of the Galois representation associated to a non-CM Hida family*, preprint, 2014.
[2] H. Hida, *Big Galois representations and p-adic L-functions*, Compositio Math. 151, 2015.
[3] H. Hida, J. Tilouine, *Big image of Galois representations and congruence ideals*, preprint, 2014.