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**Denis Benois\*** ([denis.benois@math.u-bordeaux.fr](mailto:denis.benois@math.u-bordeaux.fr)). *Extra-zeros of  $p$ -adic  $L$ -functions and reciprocity laws.*

We discuss extra-zeros of  $p$ -adic  $L$ -functions of motives having good reduction at  $p$ . An archetypical example is provided by the Kubota–Leopoldt  $L$ -function associated to a character  $\chi$  such that  $\chi(p) = 1$  and the theorem of Ferrero and Greenberg . Other interesting examples arise from some modular forms of odd weight. In this situation, the special value of the  $p$ -adic  $L$ -function can be expressed in terms of an  $\mathcal{L}$ -invariant defined using  $p$ -adic Hodge theory. In the both cases, the trivial zero appears in a critical point.

In this talk, we are mainly interested in the non-critical case. The basic example we have in mind is provided by the Rankin–Selberg convolution of two modular forms of the same weight (joint work with S. Horte). (Received January 21, 2019)