

## Dilogarithm and higher L invariants for $GL_3(\mathbb{Q}_p)$

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We consider a semi-stable three dimensional p-adic representation  $\rho$  of the absolute Galois group of  $\mathbb{Q}_p$  and assume that  $\rho$  has rank two monodromy and is non-critical. It is known that  $\rho$  depends on three L invariants up to isomorphism. We construct an explicit family of locally analytic representations of  $GL_3(\mathbb{Q}_p)$  depending on three invariants and show that there exists a unique representation (conjecturally depends only on  $\rho$ ) in this family that embeds into a suitable given Hecke eigenspace associated with a global Galois representation whose restriction at  $p$  is  $\rho$ . We will briefly introduce the construction which involves p-adic dilogarithm and then explain the relation between these representations and previous results by Breuil, Ding and Schraen.

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