The p-adic Corlette-Simpson correspondence for abeloids

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Abstract

This is joint work with Ben Heuer and Lucas Mann. For an abeloid variety $A$ over a complete algebraically closed field extension $K$ of the $p$-adic numbers, we construct an equivalence between finite-dimensional continuous $K$-linear representations of the Tate module and a certain subcategory of the Higgs bundles on $A$. To do so, our central object of study is the category of vector bundles for the $v$-topology on the diamond associated to $A$. We prove that any pro-finite-étale $v$-vector bundle can be built from pro-finite-étale $v$-line bundles and unipotent $v$-bundles.