The article under review establishes a $p$-adic version of Simpson’s “Higgs versus Betti/de Rham” equivalence.


The authors also discuss the role of stability in this picture. Semistability of a graded Higgs bundle on the special fiber is shown to be equivalent to that the Higgs bundle supports a periodic Higgs-de Rham follow. The mod $p$ stability of a 1-periodic Higgs object corresponds to the absolute irreducibility of the mod $p$ representation of a crystalline $\mathbb{Z}_p$-representation under the equivalence.

Reviewer: Dingxin Zhang (Beijing)

MSC:
- 14F30 $p$-adic cohomology, crystalline cohomology
- 14G20 Local ground fields in algebraic geometry
- 14H60 Vector bundles on curves and their moduli
- 14F40 de Rham cohomology and algebraic geometry
- 14F35 Homotopy theory and fundamental groups in algebraic geometry

Keywords:
- Higgs bundles
- $p$-adic Hodge theory

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References: