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Projective varieties with bad semi-stable reduction at 3 only. (English) [Zbl 1362.11095](#)
Doc. Math. 18, 547-619 (2013).

Summary: Suppose $F = W(k)[1/p]$ where $W(k)$ is the ring of Witt vectors with coefficients in algebraically closed field k of characteristic $p \neq 2$. We construct an integral theory of p -adic semi-stable representations of the absolute Galois group of F with Hodge-Tate weights from $[0, p)$. This modification of Breuil's theory results in the following application in the spirit of the Shafarevich conjecture. If Y is a projective algebraic variety over \mathbb{Q} with good reduction modulo all primes $l \neq 3$ and semi-stable reduction modulo 3 then for the Hodge numbers of $Y_C = Y \otimes_{\mathbb{Q}} C$, one has $h^2(Y_C) = h^{1,1}(Y_C)$.

MSC:

- [11S20](#) Galois theory
- [11G35](#) Varieties over global fields
- [14K15](#) Arithmetic ground fields for abelian varieties

Keywords:

[p-adic semi-stable representations](#); [Shafarevich conjecture](#)

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