Rapoport, M.; **Richartz, M.**

On the classification and specialization of F-isocrystals with additional structure. (English)

Zbl 0874.14008
Compos. Math. 103, No. 2, 153-181 (1996).

The paper under review studies Frobenius-isocrystals with G-structure, G a reductive group over a local p-adic field. For $G = GL_n$ the fibres of such a crystal are classified by the slopes or the Newton-polygon, and A. Grothendieck proved that this is semicontinuous in a family. For general G one still defines a slope-homomorphism, which however only defines the isomorphism class up to a finite set. Much of the paper is devoted to recalling/defining this. Then semicontinuity of the slope-homomorphism follows from Grothendieck's result.

In addition on the strata where the slopes are constant the finer isomorphism class is still locally constant. Finally there is an extension of B. Mazur's theorem concerning invariants of integral lattices.

Reviewer: G.Faltings (Bonn)

MSC:

14F30 p-adic cohomology, crystalline cohomology

Keywords:

Frobenius-isocrystals; slopes; Newton-polygon

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