

A criterion for good reduction of Drinfeld modules and Anderson motives in terms of local shtukas

URS HARTL AND SIMON HÜSKEN

Abstract. For an Anderson A -motive over a discretely valued field whose residue field has A -characteristic ε , we prove a criterion for good reduction in terms of its associated local shtuka at ε . This yields a criterion for good reduction of Drinfeld modules. Our criterion is the function-field analog of Grothendieck's [15, Proposition IX.5.13] and de Jong's [19, 2.5] criterion for good reduction of an Abelian variety over a discretely valued field with residue characteristic p in terms of its associated p -divisible group

Mathematics Subject Classification (2010): 11G09 (primary); 14E05 (secondary).