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On a conjecture of Pappas and Rapoport about the standard local model for GL_d.

(English)


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Summary: In their study of local models of Shimura varieties for totally ramified extensions, Pappas and Rapoport posed a conjecture about the reducedness of a certain subscheme of $n \times n$ matrices. We give a positive answer to their conjecture in full generality. Our main ideas follow naturally from two of our previous works. The first is our proof of a conjecture of Kreiman, Lakshmibai, Magyar, and Weyman on the equations defining type A affine Grassmannians. The second is the work of the first two authors and Kamnitzer on affine Grassmannian slices and their reduced scheme structure. We also present a version of our argument that is almost completely elementary: the only non-elementary ingredient is the Frobenius splitting of Schubert varieties.

MSC:

11G18 Arithmetic aspects of modular and Shimura varieties
14G35 Modular and Shimura varieties
20G44 Kac-Moody groups

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References:


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