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Families of Modular Forms on Drinfeld Modular Varieties for GL_N

Classical modular curves associated to GL_2 are moduli spaces of elliptic curves with additional structure. Taking advantage of the analogy between number fields and function fields, Drinfeld modules (of rank 2) were introduced as a good analogue of elliptic curves. While there are no Shimura varieties associated to the general linear group GL_N for $N > 2$, the situation is sharply different over function fields. The Drinfeld modular variety for GL_N is the moduli space of Drinfeld modules of rank N (with level structure). It is a smooth, affine scheme of dimension N-1. In this talk, I will explain how analogues of well-established theories in the classical context extend to Drinfeld modular varieties and their modular forms: notably Hida's algebraic theory of families of modular forms of slope zero, but also a continuous analogue of Coleman's analytic theory for modular forms of finite slope. Joint work with G. Rosso (Concordia Univ./Cambridge Univ.).