1147-11-503 **Mihran Papikian*** (papikian@psu.edu), Department of Mathematics, Pennsylvania State University, University Park, PA 16802, and **Fu-Tsun Wei** (ftwei@math.nthu.edu.tw), Department of Mathematics, National Tsing Hua, Hsinchu, Taiwan. *On the cuspidal divisor group and Eisenstein ideal of Drinfeld modular varieties.*

Let $A = \mathbb{F}_q[T]$ be the ring of polynomials in T with coefficients in a finite field with q elements. Let $\mathfrak{p} \lhd A$ be a maximal ideal, and denote $|\mathfrak{p}| = \#A/\mathfrak{p}$. Let $Y_0^r(\mathfrak{p})$ be the modular variety parametrizing Drinfeld modules of rank $r \geq 2$ over A of generic characteristic with a $\mathfrak{p}$-cyclic subgroup level structure. Let $X_0^r(\mathfrak{p})$ be the Satake compactification of $Y_0^r(\mathfrak{p})$. We show that the cuspidal divisor subgroup of the Picard scheme of $X_0^r(\mathfrak{p})$ is a finite cyclic group of order

$$\frac{|\mathfrak{p}|^{r-1}-1}{\gcd(|\mathfrak{p}|^{r-1}-1, q^r-1)}.$$

This is an analogue of a result of Ogg for classical modular curves $X_0(p)$ of prime level. We further define an Eisenstein ideal in the Hecke algebra acting on the Picard scheme of $X_0^r(\mathfrak{p})$, and show that the Eisenstein ideal has finite index in the Hecke algebra divisible by the order of the cuspidal divisor group. This provides some tools for investigating in the context of higher dimensional Drinfeld modular varieties the analogue of a theorem of Mazur about the equality of the cuspidal divisor group and the group $\mathbb{Q}$-rational torsion points of the Jacobian variety $J_0(p)$ of $X_0(p)$. (Received January 25, 2019)