So you see $\mu(\mathcal{A}/F) = \mu(\mathcal{A}(D)) \cdot \mathbb{L}^{-\chi(X,D)}$ ③

$\mu(\mathcal{A}(D))$ $= \mathbb{L}^{\deg D} \cdot \mathbb{L}^{-\deg D + (g-1)}$

$= \mu(\mathcal{A}(D)/\mathcal{A}(0))$ $= \mathbb{L}^{g-1}$. #.

$= \prod_{x \in X}^{w} \mu(\mathfrak{m}_x^{-n_x}) = \prod_{x \in X}^{w} |k_x|^{n_x} = \mathbb{L}^{\sum n_x \deg(x)} = \mathbb{L}^{\deg D}$ $\Leftrightarrow G = \mathbb{G}_a$.

(II) Motivic Measures: General Reductive Groups.

$\mathcal{G}/X$: reductive group scheme, η: generic point of X

$G = \mathcal{G}_\eta / F$ For simplicity, G/F: split $\rightsquigarrow T, B/F$.

$p \in X$: good reduction $\rightsquigarrow$ smooth group scheme

$\mathcal{G}(F_p) \supset \mathcal{G}(\mathcal{O}_p) \to \mathcal{G}(k_p)$

Lem. (B-B) $\mu(G) = \mathbb{L}^{\dim G} \cdot \prod_d (1-\mathbb{L}^{-d})^{\dim V_d}$

w/ $(\operatorname{Sym} X^*(T)_{\mathbb{Q}})^W = \bigoplus_{d \geq 1} V_d$

Proof. $\mu(G) = \mu(G/B)\,\mu(R_u(B))\,\mu(T)$ But

Bruhat decomposition $\nearrow$ $\quad \mathbb{L}^{?} \quad (\mathbb{L}-1)^r$ $\quad (\mathbb{L}-1)^r \sum_{w \in W} \mathbb{L}^{l(w)}$

$= \sum_{w \in W} \mathbb{L}^{l(w)}$ $= \prod_d (\mathbb{L}^d - 1)^{\dim V_d}$

#.