1145-14-331 **Dmitrii Kubrak*** (dmkubrak@mit.edu). *The growth of the number of semistable G-bundles on curves over finite fields.*

Let $\{X_i\}$ be a sequence of smooth complete curves over $\mathbb{F}_q$ such that the genus g_{X_i} grows with i. Then one can ask how fast the class number $h_{X_i} = |\mathrm{Pic}^0_{X_i}(\mathbb{F}_q)|$ grows when $i \to \infty$. Weil's conjectures give bounds from above and below: $2\log_q(\sqrt{q}-1) \leq \frac{\log h_{X_i}}{g_{X_i}} \leq 2\log_q(\sqrt{q}+1)$. In 1990's Tsfasman and Vlăduts proved that if the sequence $\{X_i\}$ satisfies some additional asymptotic properties (e.g. if $\{X_i\}$ is a tower of curves) there is a precise formula for $\lim_{i\to\infty} \frac{\log h_{X_i}}{g_{X_i}}$ in terms of some invariants $\beta_n(\{X_i\})$. Given a split reductive group G we prove an analogous formula for the (stacky) number of points on the stack Bun^0_{G,X_i} of G-bundles on X_i. Studying the geometry of Bun_G we also prove that the asymptotic formula does not change if we restrict the count to the semistable locus Bun^{ss}_G . We also expect that one can replace the stacky count with the actual number of semistable G-bundles, but can prove this only for $G = \mathrm{GL}_n$ at the moment. (Received September 01, 2018)