ALLYSA LUMLEY, Universite de Montreal
Selberg's Central limit theorem for quadratic dirichlet L-functions over function fields

In this talk we will discuss the logarithm of the central value $L\left(\frac{1}{2}, \chi_D\right)$ in the symplectic family of Dirichlet L-functions associated with the hyperelliptic curve of genus g over a fixed finite field $\mathbb{F}_q$ in the limit as $g \to \infty$. Unconditionally, we show that the distribution of $\log\left|L\left(\frac{1}{2}, \chi_D\right)\right|$ is asymptotically bounded above by the full Gaussian distribution of mean $\frac{1}{2}\log\deg(D)$ and variance $\log\deg(D)$, and also $\log\left|L\left(\frac{1}{2}, \chi_D\right)\right|$ is atleast 94.27% Gaussian distributed. Assuming a mild condition on the distribution of the low-lying zeros in this family, we obtain the full Gaussian distribution.