



Tuesday, November 27, 2012

Vicente Muñoz (Universidad Complutense de Madrid)
Poisson-Newton formulas and Dirichlet series

Abstract: The classical Poisson formula reads

$$\sum_{n \in \mathbb{Z}} e^{\frac{2\pi i}{\lambda} nt} = \lambda \sum_{k \in \mathbb{Z}} \delta_{\lambda k}$$

as an equality of distributions. This formula is related to the Dirichlet series $f(s) = 1 - e^{-\lambda s}$, as in the left-hand-side we have the sum $\sum e^{\rho t}$, where ρ are the zeroes of f , and in the right-hand-side we have Dirac deltas at the multiples of the fundamental frequency λ .

We show that for *any* general Dirichlet series $f(s) = 1 + \sum a_n e^{-\lambda_n s}$, we can associate a Poisson formula. The left-hand-side $W(f) = \sum e^{\rho t}$ is called the Newton-Cramer distribution, as it extends Newton sums to exponents $t \in \mathbb{R}$. Applications to some classical Dirichlet series, like the Riemann zeta function, will be shown.

(Joint work with Ricardo Pérez-Marco.)



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Default Data

Time 10:45 to 11:45
Location Room 2.2.D08
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