Alberto Perelli: *Non-linear twists of L-functions*

Abstract: A non-linear twist of an L-function $L(s)$ is a Dirichlet series of type

$$L(s,\alpha)=\sum_{n=1}^{\infty}a(n)e(-\alpha n^{\kappa})n^{-s},$$

where $a(n)$ are the Dirichlet coefficients of $L(s)$, $\alpha>0$ is a variable, $\kappa>0$ is a given parameter and $e(x)=e^{2\pi ix}$. We also consider multidimensional non-linear twists, where αn^{κ} in the above expression is replaced by $\alpha_1 n^{\kappa_1}+...+\alpha_N n^{\kappa_N}$. We present a survey of several results, obtained with J. Kaczorowski, concerning the analytic properties of the non-linear twists and their applications to the problem of the classification of L-functions.