

On the p -adic Leopoldt transform of a power series

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Abstract of the talk:

Let p be an odd prime number and let O be the valuation ring of a finite extension of \mathbb{Q}_p . Let $R = O[[T]]$. Let κ_0 be a topological generator of $1 + p\mathbb{Z}_p$ and let $\delta \in \mathbb{Z}/(p-1)\mathbb{Z}$. The p -adic Leopoldt transform, $\Gamma_\delta : R \rightarrow R$, is defined by:

$$\forall F \in R, \forall s \in \mathbb{Z}_p, \Gamma_\delta F(\kappa_0^s - 1) = \int_{\mathbb{Z}_p^*} \omega^\delta(x) \langle x \rangle^s d\alpha,$$

where ω is the Teichmüller character and α is the O -valued measure on \mathbb{Z}_p^* associated to F . In this talk, inspired by ideas developed by Warren Sinnott, we will study the properties of Γ_δ and apply this study to Kubota-Leopoldt p -adic L -functions.