Pro-Locally Nilpotent Derivations

Roberto Díaz[1], Adrien Dubouloz[2], Alvaro Liendo[1]

[1] University of Talca, Chile

[2] University of Bourgogne, France

Let V be an affine algebraic variety on $\mathbb{C}$ and $\mathcal{O}(V)$ its ring of regular functions, a known result is the correspondence between the actions of the additive group $\mathbb{G}_a$ on V and the locally nilpotent derivations on $\mathcal{O}(V)$. For the case of an affine ind-variety $\mathcal{V}$ and its ring of regular functions $\mathcal{O}(\mathcal{V})$ we can also associate each action of the additive group $\mathbb{G}_a$ on $\mathcal{V}$, in the category of ind-varieties, a continuous derivation on its ring of regular functions $\mathcal{O}(\mathcal{V})$. However, this derivation is not necessarily locally nilpotent. In this talk I describe a particular type of derivations, the "Pro-Locally Nilpotent Derivations", and I show some principles that make possible the correspondence between the actions of the additive group $\mathbb{G}_a$ on an affine ind-variety $\mathcal{V}$ and the pro-locally nilpotent derivations of its ring of regular functions $\mathcal{O}(\mathcal{V})$.

References

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