A theorem for attractor of endomorphism on k-affinoid spaces

In this section, we copy [Xie25, Appendix A].

Fix an algebraically closed non-Archimedean complete field $\Bbbk$ of characteristic zero, typically $\Bbbk = \mathbb{C}_p$.

Let A be a strictly and reduced $\Bbbk$-affinoid algebra, and $X = \mathscr{M}(A)$ be its Berkovich spectrum. Let $f : X \to X$ be a finite morphism of Berkovich spaces over $\Bbbk$.

Definition 1. Let ρ_A be the spectral seminorm on A. For any $g \in A$, we define

$$\rho_f(g) := \lim_{n\to\infty} \rho_A((f^*)^n(g))$$

where $f^* : A \to A$ is the induced endomorphism on A. Denote by

$$\mathcal{N}_f := \{g \in A \mid \rho_f(g) = 0\}.$$

The main result is the following theorem.

Theorem 2 (ref. [Xie25, Theorem 8.3])**.**

Appendix

References

[Xie25] Junyi Xie. "The existence of Zariski dense orbits for endomorphisms of projective surfaces". In: *Journal of the American Mathematical Society* 38.1 (2025), pp. 1–62 (cit. on p. 1).