Quasianalytic Ilyashenko algebras
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Abstract. I construct a quasianalytic field $\mathcal{F}$ of germs at $+\infty$ of real functions with logarithmic generalized power series as asymptotic expansions, such that $\mathcal{F}$ is closed under differentiation and log-composition; in particular, $\mathcal{F}$ is a Hardy field. Moreover, the field $\mathcal{F} \circ (-\log)$ of germs at $0^+$ contains all transition maps of hyperbolic saddles of planar real analytic vector fields.