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Title: The gradient conjecture of R. Thom and the non-oscillation conjecture

Abstract: Let f be a real analytic function on \mathbb{R}^n . We consider the flow of the gradient of f : $\dot{x} = \nabla f(x)$. I shall discuss first a classical result of Łojasiewicz stating that every trajectory $x(t)$ that stays in a compact set is of finite length; in particular there exists the limit $\lim_{t \rightarrow \infty} x(t)$. Then I shall discuss the “gradient conjecture” of Thom and its natural generalisation (“non-oscillation conjecture”).