Transseries.

Very roughly, the algebra $\widetilde{\mathbb{T}}$ of transseries may be thought of as the natural closure of $\mathbb{R}[x]$ under $\{+, \times, \partial, \circ\}$ and the inverse operations, with a variable x living in the real neighbourhoof of $+\infty$. $\widetilde{\mathbb{T}}$ obviously contains $E := exp$, $L := log$ and all finite iterates E_n, L_n. Each transseries $\widetilde{T}(x)$ can be written in a unique, standard form, as a *well-ordered* sum of irreducible transmonomials $\widetilde{\epsilon}(x)$ arranged in decreasing order. We impose bounded logarithmic (but not exponential) depth.

Analyzable germs.

$\widetilde{\mathbb{T}}$ possesses a subalgebra $\widetilde{\mathbb{T}}^{cv}$ of directly convergent transseries, but $\widetilde{\mathbb{T}}^{cv}$ is way too small and suffers from chronic instability (e.g. under integration). If we insist on summability, full stability, and maximal generality, the proper framework is $\widetilde{\mathbb{T}}^{as}$, defined as the subalgebra of all transseries $T(x)$ that may be resummed by *accelero-synthesis* – a procedure that extends accelero-summation, but with this main difference: at any given intermediate stage, only those 'parts' of $T(x)$ that are formally subexponential in x_i incarnate as genuine germs in ξ_i, while the 'rest' remains provisionally formal. The sums $T(x)$ of such $\widetilde{T}(x)$ are known as *analyzable* germs.

Analyzability arguably marks the uttermost limit of *formalizability* for smooth germs. Its symplifying power is unmatched, since it replaces, without any information loss, opaque geometric entities (and the operations on them) by transparent formal objects (themselves subject to transparent formal operations).