Notion of autark function.

Many entire functions naturally occurring in Analysis, notably at the interface of equational and coequational resurgence (e.g. the Stokes constants attached to singular ODE's, when viewed as functions of one of the ODE's coefficients) display remarkable 'finiteness' and 'closure' properties: their behaviour at ∞ depends on the sector, but can in each sector be modelled by divergent-resurgent asymptotic expansions, with a closed system of alien derivatives. Let us call them *autark* functions, a name suitably evocative of self-closure and self-sufficiency.

Autark functions have a quality of finiteness about them, and a predictability of behaviour, that sets them apart from the wilder transcendental functions. In fact, the dichotomy autark/non-autark is arguably no less basic than the dichotomy algebraic/transcendent. The paradigmatic example of an autark function is $1/\Gamma(z)$. The paradigmatic example of a non-autark function is $\Xi(s)$, the entire fonction classically attached to Riemann's zeta function. This of course is due to the erratic behaviour of $\Xi(s)$ in the vertical strip $|\Re(s)| < \frac{1}{2}$, which completely defies formalisation.