Synthesis of Local Objects: the antipodal involution.

The anchor point is once again the Bridge equation:

$$\textbf{BE} \qquad \boldsymbol{\Delta}_\omega Y(z,\boldsymbol{u}) = \mathbf{A}_\omega Y(z,\boldsymbol{u}) \qquad (\omega \in \Omega)$$

but approached from the other end: *start from an (admissible) set* $\{\mathbf{A}_\omega;\, \omega \in \Omega\}$ *and construct a local object* ***Ob*** *that admits* $\{\mathbf{A}_\omega;\, \omega\in\Omega\}$ *as its system of invariants.*

The way to ***Ob*** obviously passes through $Y(z,\boldsymbol{u})$, and finding $Y(z,\boldsymbol{u})$ is a problem for 'integral alien calculus'. It formally reduces to considering suitable expansions of type:

$$\sum_{1\leqslant r} \sum_{\omega_i \in \Omega} a_{\omega_1,\ldots,\omega_r}\, \mathcal{U}_c^{\omega_1,\ldots,\omega_r}(z)\ \mathbf{A}_{\omega_1} \ldots \mathbf{A}_{\omega_r} \qquad (c \in \mathbb{R}^+)$$

The crux, however, is to ensure convergence in these expansions. This calls for a quite specific type of resurgence monomials – the so-called *spherical* monomials $\mathcal{U}_c^{\bullet}(z)$, which crucially depend on a parameter c and whose chief peculiarity is their roughly similar behaviour at the antipodes 0 and ∞ of the Riemann sphere. Accordingly, 'object synthesis' has this singular feature: along with the sought-after object ***Ob*** it automatically produces an antipodal shadow ***Ob****.