Stage 11 — v7 Plan (One-Pager)

Context

Stage 11 represents the breaking point of the NGeodesic project, where the heuristic parsing framework is replaced with an explicit warped manifold energy approach. By warping the latent manifold into a single, stable well, hallucinations are suppressed by design. v7 builds on previous steps (v1–v6), balancing recall recovery, hallucination suppression, and precision stability.

Core Doctrine: Warp $\rightarrow$ Detect $\rightarrow$ Denoise

- **Warp the Manifold:** Subspace projection and background removal to form a single dominant basin.
- **Detect the Singularity:** Matched filtering with calibrated z-scores; temperature descent to stabilize detection.
- **Denoise:** Suppress phantom wells via lateral inhibition and residual refinement.

v7 Goals

- Preserve recall ≈ 0.9 ($\pm 2\%$).
- Maintain hallucination rate ≤ 0.26 (flip_v ≤ 0.24).
- Ensure precision ≥ 0.8.
- Guarantee margins ≥ 0 (true wells deeper than phantoms).
- Phantom Index trending downward.
- Improve F1 and Jaccard relative to v6.

Next Steps

- Finalize v7 benchmarking using stage11-well-benchmark-v7.py.
- Dump manifold states for visualization (true vs phantom wells).
- Generate 3D rendering of the warped manifold to illustrate clean well structure.
- Prepare comparison report: Stock vs v7 (accuracy, recall, precision, hallucinations, margins).