

# Stage 11 — Well Components & Impact Scores

This table summarizes the role of each well component in the Stage 11 parser, describes its effect on the energy landscape, and scores its leverage (out of 10) for reducing hallucinations, especially flip\_v.

Component	What It Does	Effect on Wells	Impact on Hallucinations (0–10)
Residual Capture w_res	Captures variance unique to each channel after depth normalization.	Deepens wells for structured residual bumps.	8
Raw Signal w_raw	Direct correlation with raw traces.	Anchors wells to visible signal; noisy baseline.	6
Common-Mode w_cm Pen	Penalizes bumps shared across channels.	Shallower wells if a feature is global.	5
Lateral Inhibition (strength, S)	Spreads penalty around chosen peaks.	Flattens nearby/overlapping wells.	7
Annealing Schedule	Controls stochastic vs. greedy descent.	Exploration at high T, exploitation at low T.	3
Prototype Shape	Half-sine template matched to traces.	Defines mold for wells; strong mimic risk.	9
Calibration (Permutations)	Sets z-score scale for significance.	Adjusts depth vs. null expectation.	6