

HTML full text — Groundability, Not Scale Alone

PRIMARY

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Assessment. Primary, and the only place the operative definitions appear. Affiliations were taken from this rendering of the work's own front matter, which gives University of California, Berkeley and Virginia Tech with the corresponding author at berkeley.edu; the per-author mapping is not reproduced here, so the edition says only that the researchers are at those two institutions. The PDF was not readable this run — the fetch proxy rate-limited it (HTTP 429) and was not retried.

Metric definitions. Coverage: fraction of traces receiving a decision rather than abstention. Risk: error rate among non-uncertain decisions. Catch rate: $P(\text{reject} \mid \text{defect})$. Over-rejection rate: $P(\text{reject} \mid \text{acceptable})$.

Evidence formats. Structured (non-grounded) evidence is pipeline-selected but independently unchecked — changed code and heuristic signals. Grounded evidence is backed by independent verification such as static analysis or test execution.

Composition of the 411 real traces. 154 GPT-5.4 (32 design, 122 held-out), 59 Gemini, 78 multilingual GPT-5.4, 120 Claude-Sonnet. Plus 101 synthetic/controlled cases: 37 reference patches, 34 ablations, 30 naturalistic pilot cases.

Agents audited. GPT-5.4, Gemini-2.5-Pro, Claude-Sonnet-5.

Reviewer models. Llama-3.1-8B, Qwen-2.5-Coder-32B, Qwen-2.5-72B, GPT-OSS-120B, Qwen3-235B, GPT-4.1.

Findings. On 122 held-out traces with official execution evidence, five reviewers improved both catch and over-rejection versus structured evidence; GPT-OSS-120B and GPT-4.1 classified all 122 correctly. Frozen cascade on held-out sets: GPT-5.4 coverage 0.89, risk 0.33, catch 0.76, over-rejection 0.66; Gemini coverage 0.86, risk 0.26, catch 0.80, over-rejection 0.67. Reviewer size is not a consistent predictor of quality — parameter count showed no monotonic correlation across the model ladder.