Field errors, conserved moments and correlation invariance — review sheet

Use this after attempting the worked examples and practice. Explain each claim in words before calculating.

Key ideas

- Present one bounded question with traceable evidence.
- Correlation, field error and conservation measure different properties.
- Undefined metrics need explicit reporting.
- Initial-condition consistency belongs in a conservation audit.
- A smaller supported claim is preferable to an unsupported broad one.

Common errors and repairs

Treating correlation one as zero numerical error. Compute amplitude/offset-sensitive metrics and inspect the field.

Replacing an undefined correlation with zero. Report why the denominator vanishes.

Calling synthetic-reference agreement biological validation. State the missing measurement and model evidence.

Retrieve without your notes

- What does a mean-only field preserve?
- What makes a limitation useful?

Readiness check

- Present a bounded research claim with its model identity, evidence and limitations.
- Calculate and contrast field error, mean balance and correlation on transparent counterexamples.
- Review a peer's evidence chain and propose a concrete next test.
- Distinguish a demonstrated result from a hypothesis or optional research extension.