Paper Validation Report
for DS2025_diff

Correspondence: Yes
Percentages: 85.0%

Conclusion:

The repository contains end-to-end scripts that (1) generate or load the same ODE and PDE data sets named in the paper (2-nd-order ODE, Burgers, KdV, Laplace, Wave, pyqg), (2) compute six numerical-differentiation schemes (Gradient, Adaptive, Polynomial, Spectral, Inverse, Total), (3) add the three stated noise levels (0, 0.5, 1 %), (4) run the EPDE evolutionary symbolic-regression search with exactly the hyper-parameters described (multi-objective mode, population 7, ≤8 terms, 30–80 epochs, 50 runs), (5) evaluate Structural Hamming Distance and coefficient statistics, and (6) output the same kinds of tables and figures the paper reports. Minor discrepancies remain (tables are created in notebooks rather than as ready-made LaTeX, some helper functions are duplicated, and execution order is scattered), but every core methodological element is present and reproducible, so overall alignment is strong but not perfect.