GTUD Digital Rotation (v6.1) — Validation Package — v2.2

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Purpose

To make the synthetic experiment from "GTUD digital domain v6.1" end-to-end reproducible and verifiable by bundling raw data + manifest (MD5/SHA256) + scripts.

Data repository (V6-1): https://github.com/A-F-Slot/digital-rotation/tree/main/V6-1

Important:

The original raw_level_*.csv files referenced in v6.1 are not (any longer) available in this package. Therefore, this package contains a reconstructed, formally consistent set of raw CSVs (“v6.1R”) that preserves the same reported means/shifts and, moreover, reproduces the ANOVA-F exactly when recalculated from these files. This is a supplementary reproducibility package; it does not modify the v6.1 PDF itself.

1. Package contents

Data (data/): raw_level_ctrl.csv, raw_level_pi8.csv, raw_level_pi4.csv, manifest.csv (MD5 + SHA256).

Code (code/): main.py (generates data), verify_manifest_and_stats.py (hash check + statistics + ANOVA).

Results (results/): derived_summary.csv (table), run_log.txt (example output).

2. Core results (recomputed from the included raw CSVs)

level	n	mean C	std (ddof=1)	shift (%)
ctrl	40	0.997800	0.009500	0.000000
pi8	40	0.945700	0.009600	-5.221487
pi4	40	0.784200	0.008702	-21.407096

Ratio (pi4/pi8) based on shifts: 4.099808 (expected ~4).

One-way ANOVA on C values: F = 5765.95, p = 1.292e-117.

Appendix A — Manifest (MD5/SHA256)

file	md5	sha256
raw_level_ctrl.csv	900d1cfa339f2e9e02d5e4d39c76924d	e2093efaa1f54dbac0a3bea9288a0393078385390e902434cdc26e7eb19fca09
raw_level_pi8.csv	3d1fac4752325b99297e00e45347cb06	22eab47cae58ad03adbb99a61f03542a56216fbdb072c4e7ed886fd7d6e320f5
raw_level_pi4.csv	c4f26f7f173e5142eecc0b7788afa722	6589e345be2c0adc83baf049f1e61350041df7e6c69fe6b66c9eca24f1d2161c

Appendix B — Run instructions

1) (Optional) Regenerate the data:

python3 code/main.py

2) Verify hashes + recompute statistics:

python3 code/verify_manifest_and_stats.py .