HGP - Hypoteticky Gravitovoltaicky Panel Scientific Working Dossier (Theory, Models, Simulations, Falsification)

Version: 1.0 (research-grade compilation; no build instructions; safety-first).

Abstract

Purpose. This dossier consolidates the HGP concept into a single, research-usable document: axioms, theoretical framing, mathematical toy models, simulation scaffolding, and falsifiable predictions. It is designed to support rigorous discussion and staged experimental planning while explicitly avoiding operational construction procedures for hazardous systems.

Core premise (hypothetical). Gravity is treated as an emergent optimization process over informational state complexity. If a system can inject structured local "computational inefficiency" and if the substrate relaxes it, a measurable relaxation flux may appear as correlated signals (noise, hysteresis, non-trivial ON/OFF statistics).

Safety. High voltage, vacuum engineering, cryogenics, and strong-field operation are out of scope. This document focuses on models, measurement logic, falsification protocols, and simulations.

Source anchors used

This dossier is aligned to the provided project PDFs: (1) "Hypoteticky Gravitovoltaicky Panel (GP): Komplexny Finalny Report" (9 Jan 2026) and (2) "Rozsireny a Spracovany Text o Hypotetickom Gravitovoltaickom Paneli (GP)" (9 Jan 2026).

Table of contents (manual)

1. Prolog and stance

We proceed as an **architect of hypotheses**, not as a claimant of physical truth and not as a mystic. The goal is a **consistent hypothetical mechanism** within a clearly stated axiom set. We treat the concept as **engineering fiction with scientific discipline**: explicit assumptions, explicit predictions, and explicit failure conditions.

Four strict rules

1) No magic: only extended logic inside declared axioms. 2) No internal contradictions. 3) Every step must be necessary. 4) Respect existing physics: we do not "delete" it; we embed it as an emergent layer in a larger hypothetical frame.

2. Axioms and hypothesis space

Axiom A1 (core, radical). Gravity is not fundamental; it is an emergent macro-behavior of an underlying optimization process over informational state complexity. Newton/Einstein remain effective descriptions in the observed regime, but not the substrate rules.

Axiom A2 (relaxation). The substrate tends to reduce a global "existence cost" functional C_total = C_energy + C_entropy + C_compute + C_instability (schematic). This is an abstract functional, not a confirmed physical quantity.

Axiom A3 (soft spots). The most "responsive" domains are those with many degrees of freedom: quantum vacuum-like fluctuations, asymmetry fields, and informational boundary conditions (holographic-style language used as analogy).

Interpretation. The device concept does not create energy from nothing. It hypothesizes a way to create a local state that the substrate strongly prefers to relax, producing a measurable relaxation signature.

Hypothesis branches

Branch	Description	Falsification pr
H0	Null: all observed signals are instrumental artifacts (drift, leakage, EM pickup, statistics).	Always first
H1	Conventional harvesting: any power/flux comes from known sources (thermal gradients, corona, tribo, RF).	High
H2	Information-thermo coupling only: signatures consistent with Landauer-like bounds; no net energy beyond inputs.	High
H3	Structured anomaly-relaxation: correlated ON/OFF signatures survive robust null tests (still no net energy claim).	Medium
H4	Maximally exotic: substrate-level optimization yields non-classical relaxation channels.	Last

3. Layered integration of known concepts (as inspiration)

This project textually blends several idea families as **inspiration layers**: (1) thermodynamics and entropy gradients; (2) information physics (Landauer principle as a sanity bound); (3) entropic/emergent gravity narratives (Verlinde-style framing as a conceptual tool); (4) field asymmetry as a way to create structured non-equilibrium boundary conditions. None of these layers is taken as proof of the overall hypothesis.

Key guardrails

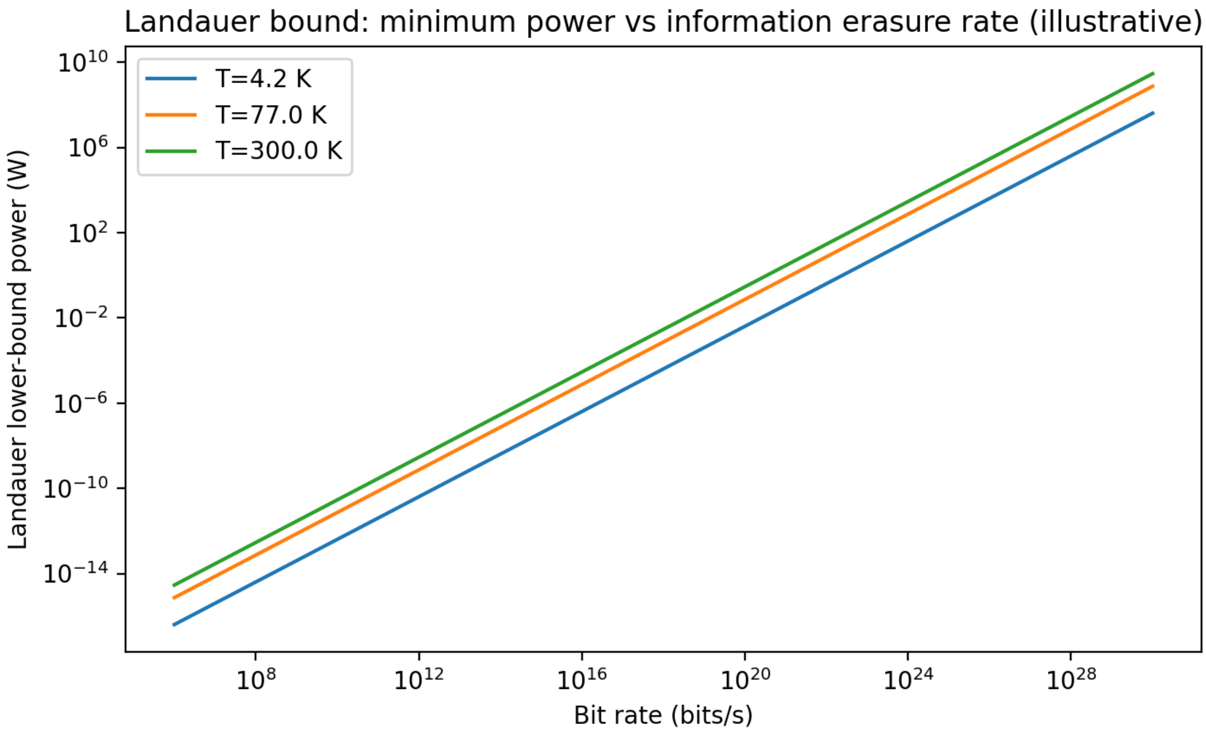
- Any claimed "output" must be measured against strict artifact controls and energy accounting. - If the effect scales with wiring, humidity, temperature gradients, or EM environment, it is likely conventional. - A credible anomaly must survive polarity flips, blinding, randomization, and replicated statistics.

4. Mathematical framing and toy equations

The provided PDFs include toy equations linking informational entropy change ΔS_inf to an energy-like term $E = T \cdot \Delta S\_inf$. Here we treat this as a **modeling language**, not a confirmed physical law. We use it to derive **order-of-magnitude checks** and **falsifiable constraints**.

Information entropy (Shannon form). $H(X) = -\Sigma\ p\_i \log2(p\_i)$. A notional informational entropy $S\_inf \sim N\ kB \ln 2 \cdot H(X)$.
Gradient. ∇S_inf is treated as a driver of relaxation in the toy world. An information flux can be written as $J\_inf = -D\ \nabla S\_inf$ (diffusion-like analogy).
Landauer bound (sanity constraint). Any irreversible erasure of one bit at temperature T has a minimal dissipation $kB \cdot T \cdot \ln 2$. If a model implies massive bit erasure, it implies at least that much heat generation.

Figure 4.1: Landauer lower-bound power vs bit rate (illustrative)



Interpretation: If a hypothesized mechanism requires an effective information erasure rate of R bits/s, the minimum power scale is $P\_min = kB \cdot T \cdot \ln 2 \cdot R$. This does not validate HGP; it constrains what would be thermodynamically consistent in any information-based story.

5. Predictions and falsification gates

A hypothesis is only useful if it makes predictions that can be falsified. Below are staged gates that must be passed before interpreting any signal as non-trivial.

Gate	Requirement	Fail implies
G0 Instrumental Sanity	Sensors stable; calibration traceable; no saturation; data logged with metadata.	Measurement invalid
G1 Null equivalence	Device-absent and device-present rigs behave identically under blinding.	Artifact / bias
G2 Polarity symmetry	Signals behave as predicted under polarity flips; wiring swapped; grounding rearranged.	Pickup/leakage
G3 Environmental controls	Humidity, temperature gradients, EMI, vibration measured and regressed out.	Conventional sources
G4 Replication	Independent repeat with the same protocol yields comparable statistics.	Non-robust effect

Measurable signatures (safe focus)

Rather than measuring "net energy", begin with: (a) correlated noise changes; (b) hysteresis under controlled toggling; (c) ON/OFF mean-shifts with blinding; (d) spectral changes in PSD; (e) cross-sensor correlations. These are the earliest-stage indicators and can be analyzed with robust statistics.

6. Simulation suite and illustrative results

Simulations here are **illustrative toy models**. They do not prove physical feasibility. Their purpose is to: (1) translate assumptions into expected signatures; (2) stress-test analysis pipelines; (3) estimate false-positive rates under realistic noise and drift.

Figure 6.1: Toy cost functional under periodic anomaly injection

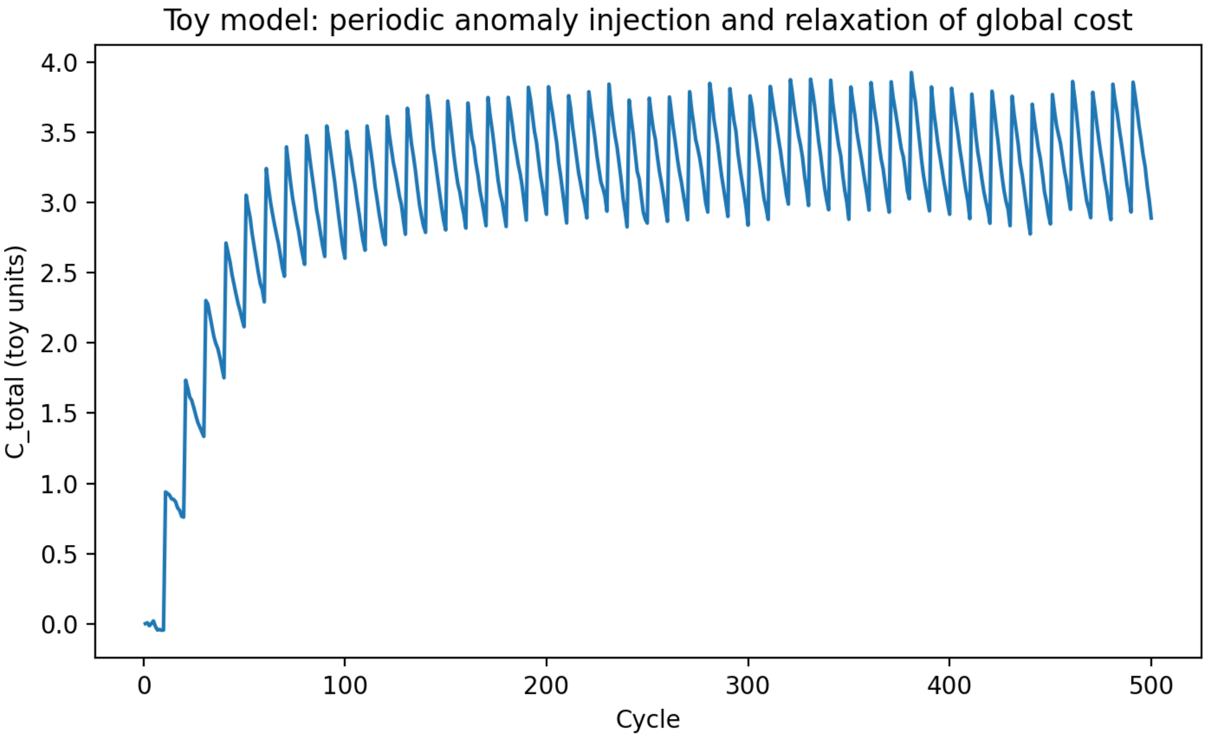


Figure 6.2: Derived relaxation flux J = -dC/dn (toy)

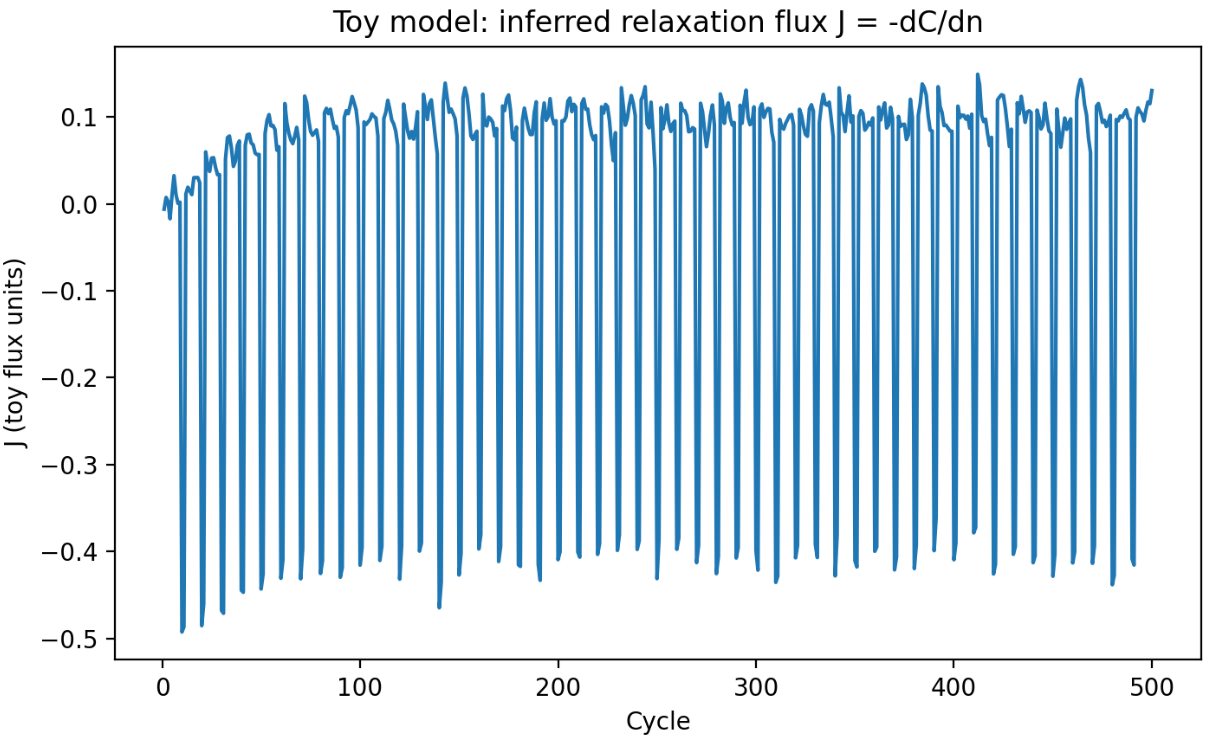
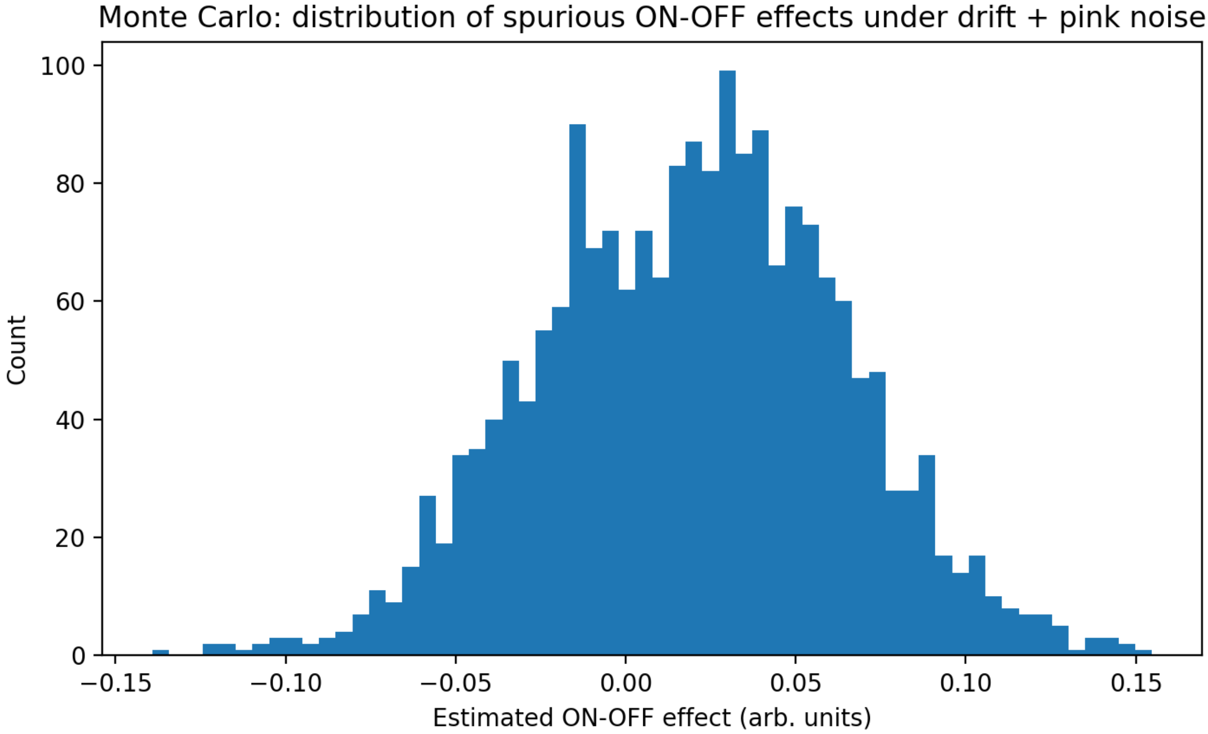
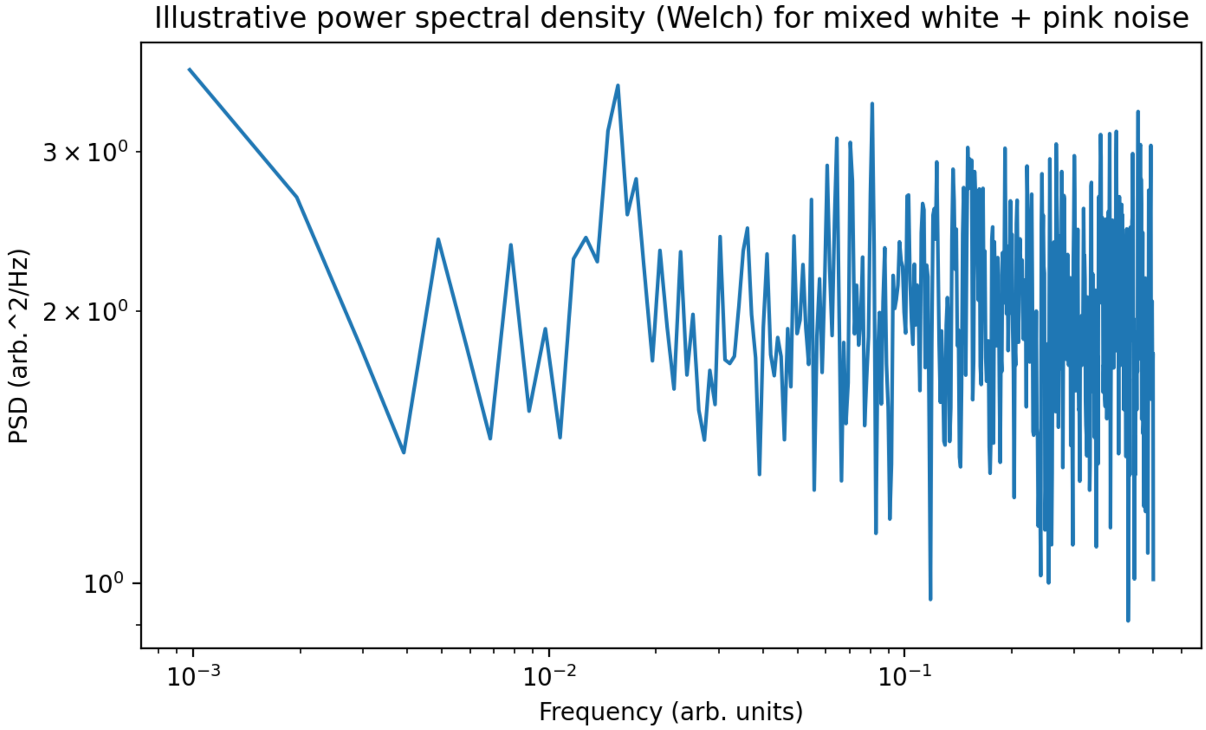

Toy model: inferred relaxation flux J = -dC/dn
J (toy flux units)
0.1
0.0
−0.1
−0.2
−0.3
−0.4
−0.5
0
100
200
300
400
500
Cycle

Figure 6.3: Monte Carlo spurious ON-OFF effects under drift + pink noise



Interpretation: Even with no true effect, ON/OFF toggling can yield non-zero mean differences due to drift and correlated noise. Therefore, any claimed anomaly must be evaluated against Monte Carlo baselines, block randomization, and drift modeling.

Figure 6.4: Illustrative PSD for mixed white + pink noise



7. Measurement logic: null tests and anti-self-deception

This section provides a rigorous, research-friendly protocol framework without describing hazardous construction. It is intended for safe bench-level measurement practice and statistical validation.

Protocol skeleton

1) Define hypothesis and primary endpoint (e.g., ON-OFF mean shift in sensor A, pre-registered). 2) Define null model and confounders (drift, temperature gradient, EMI). 3) Blinding: operator should not know ON/OFF state; randomize schedule. 4) Logging: raw data + metadata (time, temperature, humidity, supply rails, grounding topology changes). 5) Analysis: pre-defined filters, PSD, Allan deviation, regression for confounders, Monte Carlo baseline. 6) Report: effect size, confidence intervals, robustness checks, and failure analysis.

Stop conditions

Stop immediately and label results "invalid" if any of the following occur: sensor saturation; undocumented wiring change; missing metadata; uncontrolled EMI event; temperature step without logging; any post-hoc thresholding that was not pre-registered.

8. Safety, ethics, and publication rules

Because the broader HGP narrative touches on high-risk domains (HV, vacuum, cryo, strong EM fields), this dossier enforces a **safety-first** boundary. It does not include actionable build steps, wiring diagrams, or operational parameters for hazardous setups.

Ethics. If public-facing materials are produced, they must: (1) separate speculation from established science; (2) publish null results; (3) include replication guidance; (4) avoid claims of unlimited energy; (5) encourage independent review.

Appendix A: Notation (quick reference)

Symbol	Meaning (in this dossier)
C_total	Abstract global cost functional (toy)
S_inf	Notional informational entropy (modeling language)
H(X)	Shannon entropy of distribution X
J_inf	Information flux (diffusion-like analogy)
kB	Boltzmann constant
T	Temperature in kelvin
P_min	Landauer lower-bound power for irreversible erasure

Appendix B: Example run log template (minimal)

Recommended columns for each run: timestamp_utc, run_id, blinded_state, operator_id, sensor_A_raw, sensor_B_raw, temperature_C, humidity_pct, supply_V, ground_topology, notes, anomalies_flag.

timestamp_utc	run_id	blinded_state	temperature_C	humidity_pct	notes
2026-01-09T12:00:00Z	R001	X	22.1	41	baseline
2026-01-09T12:05:00Z	R002	X	22.1	41	-

Appendix C: Reading list (non-exhaustive)

This list is provided as background reading categories rather than endorsements: - Thermodynamics and statistical mechanics (entropy, free energy). - Information physics and Landauer principle. - Emergent / entropic gravity discussions (as conceptual material). - Metrology: noise, drift, Allan deviation, PSD estimation, blinding/randomization. - Scientific methodology: preregistration, replication, confound control.