

Addendum 359a: The Bridge as a Hubble-Tension Stance

$H_0 \approx 75.8$ sides with the local camp; why the de Sitter 2π
does not yet derive from the corpus

(Addendum to Papers 35 and 32; follows Addendum 358a)

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Abstract

Addendum 358a gave the candidate bridge $H_0 = 2\alpha^2/T_{\text{breath}}$, predicting $H_0 \approx 75.8$ km/s/Mpc parameter-free, with the de Sitter horizon factor 2π (in $a_0 = cH_0/2\pi$) as the residual. This addendum does two honest things. **(1) It reads the prediction as a stance on the Hubble tension.** 75.8 km/s/Mpc is closest to the *local* / late-universe value (SH0ES 73.04, +3.8%) and furthest from the *early* / CMB value (Planck 67.36, +12.5%); it lies above every anchor. With the clean 2π , the local distance-ladder value is consistent to $\sim 4\%$ ($cH_0/a_0 = 6.06$ vs $2\pi = 6.28$) and the CMB value only to $\sim 12.5\%$ ($cH_0/a_0 = 5.58$). So the corpus bridge *sides with the high/local camp* and disfavours the CMB value — a sharp, falsifiable position, and a first-principles reason (α , a_0 , de Sitter) to expect the higher H_0 . **(2) It reports a negative result on deriving the 2π .** The corpus has no horizon-thermodynamic structure, and the breath’s own 2π ($\lambda = e^{2\pi i \rho_*}$) advances the Hopf phase by only $2\pi\rho_* = 0.154$ rad per breath ($\rho_* = 0.0245$), not a full turn — so the naive identification “breath $2\pi =$ de Sitter thermal 2π ” is scale-mismatched and unjustified, the same scale gap 357a named. Closing the 2π is therefore a research *program* (a fold/cokernel-native horizon thermodynamics), not a one-line identity. **Verdict:** the bridge is a falsifiable Hubble-tension stance (local side); the clean 2π closure is open and named. All claims pinned by `verify_P359a.py` (11/11).

1 The stance

Proposition 1.1 (The bridge sides with the local camp). *The parameter-free prediction $H_0 = 2\alpha^2/T_{\text{breath}} = 75.8$ km/s/Mpc lies above every measured anchor and is closest to the local distance-ladder value. Reading the de Sitter factor as the clean 2π , the consistency $cH_0/a_0 \stackrel{?}{=} 2\pi = 6.283$ holds to 3.8% at SH0ES (73.04, $cH_0/a_0 = 6.06$), 8.6% at TRGB (69.8), and only 12.5% at Planck (67.36, $cH_0/a_0 = 5.58$). The corpus therefore predicts the higher H_0 and disfavours the CMB value: a falsifiable position rather than a fit.*

Remark 1.2 (Why this is a real result). The Hubble tension is usually framed as a conflict between two measurements with no first-principles preference. The corpus bridge supplies one: from the galactic anchor $a_0 = \alpha$ (where the corpus succeeds, SPARC/Paper 39) plus the de Sitter horizon relation, the expansion rate is predicted at the top of the observed range. If the local value is correct, the corpus is consistent with the clean 2π to a few percent; if the CMB value is correct, the corpus requires a horizon factor ~ 5.6 , away from 2π . The next tightening of H_0 adjudicates.

2 Why the 2π does not yet derive

Proposition 2.1 (The breath 2π is not the de Sitter thermal 2π). *The de Sitter factor 2π in $a_0 = cH_0/2\pi$ is the Gibbons–Hawking Euclidean-time periodicity of a cosmological horizon. The corpus has no horizon-thermodynamic structure in canon (no de Sitter temperature, no Unruh relation, no surface gravity). Its only native 2π is the breath map’s full-turn phase, $\lambda = e^{2\pi i\rho_*}$; but per breath the Hopf-base phase advances by only $2\pi\rho_* = 0.154$ rad ($\rho_* = 0.0245$) and the fibre phase by $2\pi\rho = 3.22$ rad — neither completes a full 2π turn. Identifying the breath 2π with the de Sitter thermal 2π is thus a scale-mismatched move, of exactly the kind 357a warned against (the breath is a Myr micro-clock; the de Sitter horizon is a Gyr thermal scale). The 2π is not derived here.*

Remark 2.2 (The residual is a program, not an identity). Closing the 2π requires a fold/cokernel-native horizon thermodynamics: a derivation, from the corpus’s own fold-cascade or cokernel/void structure (Paper 38), of a horizon temperature whose Euclidean periodicity is 2π and whose acceleration scale is a_0 . That is a research program, not a one-line identity. Until it exists, the bridge $H_0 = 2\alpha^2/T_{\text{breath}}$ stands as a candidate with a falsifiable prediction, and the 2π as its named floor.

Status

The 358a bridge, read as physics, is a **falsifiable stance on the Hubble tension**: the parameter-free $H_0 = 2\alpha^2/T_{\text{breath}} = 75.8$ km/s/Mpc sides with the local/late-universe camp, matching the SH0ES distance-ladder value to $\sim 3.8\%$ (consistent with the clean de Sitter 2π) and the Planck/CMB value only to $\sim 12.5\%$ (Proposition 1.1). This is a first-principles preference for the higher H_0 , from the galactic anchor $a_0 = \alpha$ and the de Sitter horizon relation, with no cosmological data fitted. The de Sitter factor 2π does *not* derive from current corpus machinery: there is no horizon thermodynamics in canon, and the breath’s own 2π advances the Hopf phase by only $2\pi\rho_*$ per breath, not a full turn, so it cannot be naively identified with the de Sitter thermal 2π (Proposition 2.1). The residual is therefore a research program — a fold/cokernel-native horizon thermodynamics (Remark 2.2) — not a quick identity. **Verdict**: the stance is a real, falsifiable result; the clean 2π closure is open and named. No new objects; no published number changes. Verifier: `verify_P359a.py`, 11/11 pass.

Relation to the arc. 357a named the fold-rate floor; 358a lifted it to the candidate bridge $H_0 = 2\alpha^2/T_{\text{breath}}$; this addendum reads the bridge as a Hubble-tension stance and sharpens the 2π residual into a horizon-thermodynamics program. The dark-energy verdicts are unchanged: the dynamic fold-tail model is disfavoured by DESI (349a), the ontologically-faithful dark energy is the cokernel/void (350a); the bridge concerns the expansion *rate*, independent of those.