

**Logical Bianchi identity (v2).** On the directed phase complex with cells for states (,,VAC) and oriented edges, define a discrete exterior derivative  $d_L$  with  $d_L^2 = 0$ . Let  $G$  be the curvature-like 2-form (phase tensor aggregate) and  $J$  the induced contradiction current. We enforce  $d_L G = 0$  and  $d_L J = 0$ —“the boundary of a boundary is zero.” Operationally, we report a residual

$$\epsilon_B = | \# \text{enter}() - \# \text{exit}() |$$

as `bianchi_residual`; small  $\epsilon_B$  is a health criterion.

*Attribution.* The explicit conservation reading and residual construction build on an external contribution (“Revisiting Logical Bianchi Identity”), duly credited. The conjugate-quantities identity and LEE’s original Bianchi analogy remain the author’s prior work.