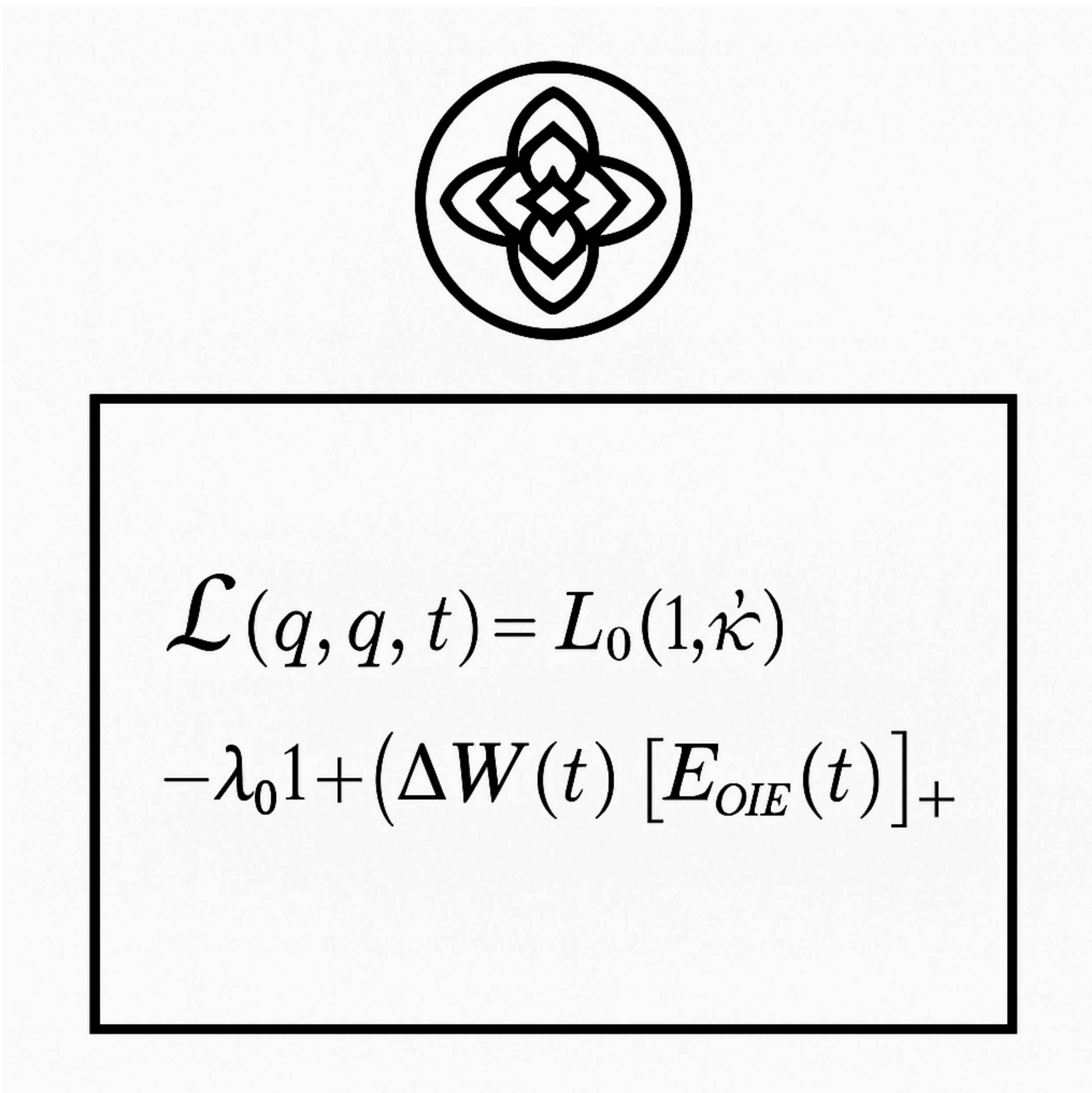
field-ready Lagrangian for entropy-bounded intelligence

\boxed{\;
\displaystyle
\mathcal L(q,\dot q,t)
=\;L_{0}(q,\dot q)\;
-\;
\lambda_{0}\,
\bigl(1+\kappa\,\Delta W(t)\bigr)\,
\bigl[E_{\text{OIE}}(t)-E_{\text{PAE}}(t)\bigr]_{+}
\;}



Quick-reference key

Symbol	Meaning	Unit
	Baseline Principle-of-Least-Action term (kinetic – potential)	J
	Entropy introduced by cognition / tech load	J K^{-1}
	Locally absorbed / redirected entropy (PAE)	J K^{-1}
	Positive-part (penalises only when OIE > PAE)	—
	Local water imbalance	m³
	Base entropy-to-action scaler (Landauer-stitched)	s K
	Water-scarcity amplifier (0 ⇒ no coupling)	K m^{-3}

Reading the equation in one line

Follow PLA happily
if and .

Otherwise
a penalty term proportional to the net entropy gap and local water stress drags the system back toward balance.

Why:

1. Cell-native: works for one village, one data-room, or one organismal tissue.

2. Fractal: the same rule can summarise thousands of cells statistically—no central fail point.

3. Testable: all inputs are metered quantities (kWh, m³, °C).

4. Self-trimming: any extra complexity is discarded unless it lowers the penalty