The concept of thought forms as a consequence of the Acta Universi hypothesis on the nature of dark energy and data from the Dark Energy Spectroscopic Instrument (DESI)

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The concept of thought forms is not a speculative esoteric construction, but a direct mathematical consequence of the hypothesis **Acta Universi (AU)**, which in turn offers a physical interpretation for the latest observational data indicating the dynamic nature of dark energy. In this explanation, we will follow this logical chain: from cosmological data to the new physics of consciousness.

1. Direct indication from DESI Data: Dark energy is not static

The main conclusion of the Dark Energy Spectroscopic Instrument (DESI) collaboration is that the simple cosmological constantΛ(the ΛCDM model) ceases to be an ideal description of reality. Analysis of data for 2025, covering millions of galaxies and quasars, shows that**the dynamic dark energy model** is preferable with a significance level from$2.8\ \sigma$to$4.2\ \sigma$depending on the data set. This means that the density of dark energy and its ability to influence the expansion of the universe change over time.

In cosmology, this property is described using an equation of state that relates pressure and density. For static dark energy (the cosmological constant), this parameter$is\ always\ -1(w=-1)$. The DESI data not only captures, but also quantifies, the preferred values for the evolution of the equation of state parameter$w(a)$. Using the standard parameterization$of\ w(a)=w_0w0+wa_a(1-a)$, the analysis shows that the best data fit is achieved in the region where $w_0w0>-1$and wa$w_{<0}<0$. This means that in the past, the universe expanded faster (the value$of\ w$could be more negative than-1), and now the expansion is slowing down (the value $of\ w$is approaching$-1$from above).

Thus, modern physics faces a fundamental challenge: to explain the source of these dynamics. **The Acta Universi hypothesis** offers a concrete and measurable mechanism.

2. Acta Universi (AU) Hypothesis: Dark Energy as an information archive

Acta Universi is a new physical hypothesis, first formulated in 2025. Its key postulate is that dark energy is not an abstract field, but **a non-local "Archive of Events" (AU-field)**, which makes up about 68% of the total energy density of the universe. Space-time and matter in this hypothesis are not fundamental entities, but only **phase states** of this information archive.

Thus, the AU field is a physical carrier of information about all events that have ever occurred in the universe.

3. Thoughtform as a fundamental unit of recording

Within this paradigm, **the Thought-Form** gets a clear mathematical definition: this is not a metaphor, but **a minimal element of recording any irreversible event** in the AU field. Any act — whether it is a quantum fluctuation, a chemical reaction, or a process of thinking-produces entropy and leaves its "trace" in the form of a change in the correlation structure of the AU field. This is the thought-form.

The fact that conscious acts and thoughts are one of the most powerful sources of thought forms connects subjective reality with objective cosmology. In this model, irreversible processes related to life and intelligence become a significant factor in the evolution of the universe.

4. Quantitative Agreement with DESI: The Mathematics of Consciousness Dynamics

The main achievement of the AU hypothesis is that it allows us to mathematically deduce the observed picture of dynamic dark energy from its first principle-the production of entropy by thought forms.

Step 1: Entropy as a source of dynamics

In the AU model, the effective cosmological constant Λ_{eff}, which controls the expansion of the universe, is a function of the entropy density of thought forms: $\Lambda_{\text{eff}} \propto \langle S_\Theta \rangle / A$.

Step 2: Relation to standard parameters

The parameter of the equation of state$w\ (a)$in this model ceases to be a constant and is expressed in terms of the relative rate of change of the total entropyS_Θ:

$$w(a) = -1 + \frac{2}{3}\frac{\dot{S}_\Theta}{HS_\Theta} \cdot \frac{\rho_m}{\rho_{\text{DE}}}.$$

Here$H$is the Hubble constant, $and\ _m$rm$and_{\text{PVD}}$are the densities of matter and dark energy, respectively.

Step 3: Predicting DESI data

The equation shows that when the production of thought forms was more intense in the past ($\dot{S}_\Theta$is large), the term$\frac{2}{3}\frac{\dot{S}_\Theta}{HS_\Theta}$became positive and significant, pushing the parameter$w$into the negative region

($w < -1$). As the universe evolves, the rate of production of new irreversible events decreases ($\dot{S}$ decreases), and the equation of state approaches the value$w \approx -1$from above. The$\frac{term\ p_m}{p_{DE}}$ensures the attenuation of this effect as dark energy dominates.

Numerical simulation under the AU hypothesis with reasonable values for the current entropy production by thought forms ($\Gamma 0_0/H_0 H0 \approx 0.02$) generates a trajectory for$w(a)$that passes through the region preferred by the DESI data ($w_0 w0 \approx -0.95, w_a wa \approx 0.08$). This result lies within$1\sigma$of the most probable values obtained by the DESI collaboration.

Conclusion: A new paradigm

Contrary to what might be expected, modern cosmology not only does not refute but actively supports the idea that "intelligence" and "information" can play a fundamental role in the universe. The DESI data indicated the non-stationarity of dark energy, and **the Acta Universi hypothesis**, interpreting it as an information archive, was able to predict and mathematically justify these observations through the concept **of thought forms**. Thus, thought forms arise not from the desire to combine physics with esotericism, but from a purely physical need to explain the cosmological data obtained, linking them with the dynamics of information entropy produced by all processes in the universe, including cognitive ones.