

Nullius in Verba

On the word of no one

By

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Summary

Nullius in verba expresses a scientific principle that physical claims should not be accepted solely on authority or computational complexity, but should remain open to observation, calculation, and independent verification. This principle is particularly relevant to radiative forcing and physical energy accounting, where calculated quantities should be distinguished from directly observable physical reality. My approach does not reject scientific literature, computational modeling, or established physics; rather, it emphasizes the need to distinguish model representations from independently demonstrated physical phenomena. As a professional engineer, I apply this standard to my assessment of physical interpretations and quantitative energy accounting, including those underlying the greenhouse-gas effect.

A Scientific Principle of Physical Verification

Science ultimately depends on the ability to distinguish physical reality from human interpretation. Mathematical models and computational tools are valuable means of investigating nature, but the complexity of a model should not itself be regarded as evidence that the physical interpretation of its output is correct.

My engineering professional approach is therefore guided by a simple principle: if I cannot observe, independently calculate, or otherwise verify the underlying physics, I regard the proposed physical interpretation as a model construct rather than established physical reality. In that sense, I regard it as fiction until the underlying physics can be demonstrated and independently verified.

This does not mean that I reject computer models, numerical methods, or computational science. Rather, I distinguish between a model representation of nature and the physical phenomenon that the model is intended to represent. A model can be useful while particular assumptions, parameters, or derived quantities remain subject to physical verification.

Radiative Forcing and the Physical Energy Balance

This distinction is particularly relevant to radiative forcing. Chapter 8, Section 8.1.1 of the IPCC AR5, *The Radiative Forcing Concept*, states: “RF is the net change in the energy balance

of the Earth system due to some imposed perturbation. It is usually expressed in watts per square meter averaged over a particular period of time and quantifies the energy imbalance that occurs when the imposed change takes place.”

The same section further states: “Though usually difficult to observe, calculated RF provides a simple quantitative basis for comparing some aspects of the potential climate response to different imposed agents...”

The IPCC therefore explicitly distinguishes between the calculated radiative-forcing metric and its direct physical observability.

My research focuses on the physical energy balance represented by such quantities. I approach that balance using classical, macroscopic thermodynamics and quantities that can be measured or independently calculated and verified, including energy, power, time, temperature, heat capacity, and mass.

The central question is therefore not whether a computer can calculate a radiative-forcing value. The question is whether the physical meaning assigned to that value can be independently demonstrated and reconciled with observable energy accounting.

Computation and Physical Reality

Modern computational resources can perform calculations of extraordinary complexity. However, computational complexity should not be confused with physical verification.

If understanding a purported physical quantity requires highly complex numerical machinery, while the underlying physical interpretation cannot be independently examined through observation, measurement, analytical calculation, or conventional engineering principles, then caution is warranted. The resulting quantity may be a useful model construct, but its physical interpretation should remain open to verification.

In engineering, physical energy balances ultimately have to close. Energy can be quantified, accumulated, transferred, stored, and dissipated. These processes can be expressed through measurable physical quantities and tested against observations. My interest is therefore in bringing the discussion back to the underlying physical accounting.

A Principle, Not a Rejection of Science

Nullius in verba does not mean rejecting scientific consensus, established physics, or computational modeling. It means accepting no physical claim solely on authority. A scientific proposition should remain open to examination through evidence, calculation, observation, and reproducibility.

For me, the essential question is simple:

Can the physics be demonstrated?

If it can, it should withstand independent calculation and observation. If it cannot, then the distinction between physical reality and model representation must remain explicit. This is the principle underlying my approach to scientific research.

Conclusion

Physical claims should ultimately be subject to observation, measurement, calculation, and independent verification.

My Personal Scientific Position

I recognize and respect the established scientific literature concerning the greenhouse-gas effect, and I have represented that literature accordingly in my published work. My personal opinion is neutral, and I have no need to resolve that question in my climate-related work.

Nevertheless, my professional engineering opinion is guided by the engineering code of ethics and by my requirement that physical interpretations and quantitative energy accounting be independently demonstrated and verified. In this regard, I do not consider the physical interpretation and quantitative energy accounting underlying the greenhouse-gas effect to have yet been demonstrated to the level of independent physical verification that I require.

My position is therefore not a rejection of the scientific literature, but a distinction between what is established in the literature and what I, as a professional engineer, regard as physically demonstrated through independent observation, calculation, and verification.

Related Work

“A Discrepancy in the Interpretation and Use of Radiative Forcing.” This manuscript examines the interpretation and use of radiative forcing in terms of energy accounting and the physical energy balance of the Earth system.

https://www.researchgate.net/publication/414776708_A_Discrepancy_in_the_Interpretation_and_Use_of_Radiative_Forcing?_tp=eyJjb250ZXh0Ijp7InBhZ2UiOiJwcm9maWxlliwicHJldmldXNQYWdlIjoicHVibGljYXRpb24iLCJwb3NpdGlvb2I6InBhZ2VDb250ZW50In19