

The Father of Lies Hijacking Climate Science: Global Mean Surface Temperature Does Not Exist

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*"The very concept of objective truth is fading out of the world.
Lies will pass into history."
— George Orwell, Looking Back on the Spanish War (1943)*

ABSTRACT

Trillions of dollars are being spent ostensibly to avert a threatened global climate disaster. According to the UN Intergovernmental Panel on Climate Change (IPCC), the global mean surface temperature (GMST) must not increase more than a stated amount above the pre-industrial baseline (1850–1900) to prevent irreversible catastrophe. However, the GMST does not have a precise regulatory definition, and is in fact physically meaningless based on fundamental principles of thermodynamics. Nevertheless, all IPCC climate models are tuned to reproduce historical GMST trends. This represents what Orwell presciently described: the systematic replacement of objective truth with politically convenient fiction.

Introduction

The UN Intergovernmental Panel on Climate Change (IPCC) has assessed the risks of global warming at 1.5°C or 2°C above pre-industrial levels as critical thresholds that some have characterized as the most important numbers in the world. According to the IPCC assessments, global mean surface temperature (GMST) must not increase more than these amounts above the pre-industrial baseline (1850–1900) to prevent irreversible catastrophes from global warming. This target was formally adopted by 196 nations in the Paris Agreement of 2015.¹

However, the mathematical and physical foundation underlying this entire framework does not exist, demonstrating that the concept of global temperature is not merely imprecise or approximate—it is mathematically and physically meaningless.

The fundamental principles of thermodynamics were well established by the 1880s. In 2007, Essex, McKittrick, and Andresen published rigorous mathematical proofs based on the fundamentals of thermodynamics and mathematics demonstrating that "there is no physically meaningful global temperature for the Earth in the context of the issue of global warming."² This lengthy set of mathematical proofs has remained unchallenged for more than 18 years—highly unusual in modern science when dealing with highly controversial topics. Typically, papers challenging established paradigms generate vigorous scientific debate, follow-up studies, and detailed rebuttals. The complete absence of *any* peer-reviewed refutation or any discussion at all of these fundamental mathematical proofs suggests something far more troubling than mere scientific and mathematical oversight.

The mathematical foundation for this conclusion rests on

pure fundamental mathematics and thermodynamic principles taught in first-year thermodynamics courses—also known as statistical physics.

Temperature is an *intensive* property that is defined only in equilibrium systems and cannot be meaningfully averaged across non-equilibrium systems. The Earth's surface air and ocean water is a large non-equilibrium system with enormous spatial and temporal variations in temperature, pressure, humidity, and heat capacity, in addition to the more than 800-fold mass density difference between sea water and air. It is well understood that as an intensive thermodynamic property, temperature is neither additive nor meaningfully averageable across such a system, in contrast to *extensive* properties such as energy, mass, and volume, which scale directly with the amount of matter and can be summed over subsystems. As Essex et al. demonstrate, there is no *physical* principle that dictates how surface temperatures should be averaged globally to produce a meaningful statistic, making any such human-chosen averaging methodology arbitrary, resulting in a statistical artifact with no physical meaning.

This arbitrariness is not a minor technical detail. There are infinite ways to average temperatures—arithmetic mean, geometric mean, harmonic mean, root mean square, and the entire family of Hölder means, among infinitely many others. Each method produces different numerical results and different trends over time. Without a physical principle to select one averaging method over another, the choice becomes purely arbitrary. As the Essex paper conclusively demonstrates, "if the physics does not prescribe one averaging rule to be used over another, as it does not for temperature, we may use any rule. If one interpreter of the data chooses one rule while another chooses a different rule, there is no way to settle a disagreement as to whether the system is getting warmer or cooler with time."²

The implications extend far beyond academic thermodynamics. Every climate model used by the IPCC (CMIP models) is tuned to reproduce historical GMST trends. When models are calibrated to match a physically meaningless quantity, their outputs become equally meaningless—not just for temperature projections, but for all variables, since these are coupled global circulation models where all components interact. The fundamental principle of scientific modeling requires that models be validated against physically meaningful observables.

Furthermore, the systematic misrepresentation of this arbitrary statistic as an actual "temperature" or "temperature anomaly" (complete with °C symbols) constitutes a deliberate deception. True thermal energy calculations require mass, heat capacity, and temperature,

$$Q = mc\Delta T$$

Where Q represents the energy transferred.

GMST calculations use area-weighted temperature averages

that ignore the vastly different heat capacities and densities of seawater versus air—differences that together amount to several orders of magnitude. The result bears no relationship to actual energy content or energy changes in the Earth system. Dimensional analysis alone yields the obvious conclusion that °C or °K are not the same dimensions as energy, which is expressed in joules or $\text{kg}\cdot\text{m}^2/\text{s}^2$, *not* °K. Nobody has presented any mathematical proof or physical evidence as to how an average of intensive temperature can in any way “represent” the extensive property energy.

Recent analysis by multiple frontier artificial intelligence (AI) systems has confirmed all the conclusions presented here. When provided with the mathematical evidence, advanced AI platforms have characterized the situation as “the greatest mass delusion in scientific history” and described IPCC methodologies as fundamentally fraudulent.³⁻⁸ These assessments are based purely on mathematical and physical principles, independent of any position on carbon dioxide, greenhouse effects, or climate policy.

This paper documents how a fundamental mathematical impossibility became the foundation for global climate policy, affecting institutions from kindergarten through international governance, and outlines the necessary steps to restore scientific integrity to climate research.

How Is Global Mean Surface Temperature (GMST) Defined?

The IPCC defines global mean surface temperature (GMST) as an “estimated global average of near-surface air temperatures over land and sea ice, and sea surface temperature (SST) over ice-free ocean regions, with changes normally expressed as departures from a value over a specified reference period.”⁹ This definition immediately reveals several critical problems that underscore the arbitrary nature of this metric.

The IPCC’s circular definition problem becomes apparent when examining their glossary entries. Global warming is defined as referring “to the increase in global surface temperature relative to a baseline reference period,” while global surface temperature is defined simply as “See Global mean surface temperature (GMST) and global mean surface air temperature (GSAT). See also Global warming.”⁹ This creates a perfect circular definition, which is meaningless in rigorous scientific discourse.

More fundamentally, the IPCC acknowledges that GMST is a statistic—a unitless fiction as demonstrated mathematically—yet systematically mislabels it with temperature units (°C). This is not merely imprecise notation but deliberate misrepresentation. When mathematical operations are performed on temperature measurements to create averages, the result is no longer a temperature in any thermodynamic sense. Appending “°C” to such a statistic represents a categorical misrepresentation designed to make the public believe they are dealing with an actual temperature measurement.

True warming, as understood in basic thermodynamics, represents a net transfer of energy into a system, measured in joules or watt-seconds—not degrees Celsius. Warming is fundamentally about internal energy increase (ΔU) in the

system. Temperature, conversely, is an intensive state property defined only in equilibrium systems through the relationship

$$1/T = (\partial S/\partial U) \text{ at constant } V \text{ and } N,$$

where S represents entropy, U internal energy, V volume, and N the number of particles. This thermodynamic definition makes clear that temperature exists only in equilibrium systems and is neither additive nor averageable across non-equilibrium systems.

The methodological arbitrariness of GMST construction poses an even more serious problem. The IPCC and NASA employ area-weighted arithmetic averaging—a statistical convention with no physical basis. No physical principle dictates how temperature fields should be globally averaged to yield a physically meaningful quantity, and infinitely many averaging methods are possible. Physically dictated averaging methods do arise in other contexts, however. The harmonic mean (\mathbb{R}^{-1}) arises, via well-understood physical principles, in contexts such as minimum entropy production and parallel resistances; the arithmetic mean (\mathbb{R}^1) applies to Newtonian heat exchange under very limited conditions; the root mean square (\mathbb{R}^2) appears in kinetic energy calculations; and the fourth root mean (\mathbb{R}^4) governs blackbody radiation where energy scales with T^4 .

A simple example demonstrates how different averaging methods yield dramatically different results. For temperature measurements of 10°C and 20°C, the arithmetic mean yields 15°C, the harmonic mean approximately 13.33°C, the RMS mean approximately 15.81°C, and the fourth root mean approximately 16.6°C. These substantial differences are not trivial variations—they represent fundamentally different mathematical operations with no physical justification for choosing one over another when dealing with Earth’s non-equilibrium surface air and water.

Beyond these fundamental mathematical problems, the data construction process itself reveals the arbitrary nature of GMST. The datasets are not comparable across time periods, with substantial changes in measurement methods, station locations, and sampling density. Moreover, the datasets are not directly comparable between different measurement approaches—combining air temperatures measured 2 meters above land and ice surfaces with sea surface water temperatures, despite these representing entirely different physical measurements with vastly different heat capacities and thermal properties. The resulting data undergoes extensive “adjustments” for various factors, with these adjustments alone often showing trends of similar magnitude to the purported GMST trends themselves. Perhaps most tellingly, the International Standards Organization (ISO), tasked in 2002 with defining global temperature, never completed this assignment.² ISO, which routinely defines complex technical standards across all fields of engineering and science, has to this day declined to define global surface temperature. This omission by the world’s premier standards body strongly suggests recognition that no scientifically valid definition exists.

The profound implications extend beyond academic thermodynamics. Small increases in this manufactured statistic have been cited to explain phenomena ranging from hurricane formation and viral infections in frogs to

encephalitis in horses, pulmonary disease, delirium, and suicide in humans.² The systematic presentation of GMST changes as “temperature” increases, complete with degree symbols, promotes public misunderstanding and drives policy decisions based on physically meaningless metrics that cannot represent true “global warming.”

Basic Thermodynamics

The fundamental mathematical impossibility of global temperature becomes clear through basic thermodynamic principles taught in introductory physics courses. Thermodynamic variables fall into two distinct categories: *extensive* and *intensive* properties. Extensive variables—including volume, mass, energy, entropy, and particle number—are proportional to system size and are additive. When combining two systems, extensive properties sum to yield the total value for the combined system. Intensive variables, by contrast, are independent of system size and represent properties of the system’s equilibrium state: temperature, pressure, and chemical potential. By definition, intensive properties exist *only* for systems in equilibrium. Critically, combining two systems does not yield an overall intensive quantity equal to the sum of its components. Two identical subsystems do not have a total temperature or pressure twice that of their individual components.

Any physically meaningful average of an intensive variable such as temperature must be derived from the additivity of the underlying extensive properties that define it. For temperature—given by $T = \partial U / \partial S$ —this means summing the system’s total energy and entropy and then determining the equilibrium temperature from their relationship. GMST, however, is produced by directly averaging local temperatures—intensive quantities—without reference to any additive extensive properties, and therefore has no thermodynamic meaning.

In any non-equilibrium system—a room with varying temperatures near ventilation ducts versus coffee pots, or Earth’s atmosphere with temperature differences exceeding 120°C between polar and equatorial regions—there is no single temperature, only multiple local temperatures where pseudo-equilibrium conditions exist. The room itself has no temperature; the Earth has no temperature. Averaging temperatures across a non-equilibrium system produces a meaningless statistical artifact, not a thermodynamic quantity. Moreover, any claim that GMST is useful as an index, proxy, or “representation” of Earth’s energy imbalance is unsupported by any mathematical or physical argument. With an arbitrary averaging choice that yields different results, there is no unique way to define what GMST is—or should be.

The Earth’s surface air and water constitute a fundamentally non-equilibrium system. Yet the UN IPCC, Paris Agreement signatories, media organizations, universities, and climate models all track statistical trends in global averages of local temperatures—not actual warming—despite the IPCC’s disingenuous tactic of defining “global warming” as an increase in GMST. True warming is a net transfer of energy into a system, producing a measurable increase in internal energy—expressed in physical units such as joules or watt-seconds, not

degrees Celsius. Conflating statistical temperature trends with thermodynamic warming is a category error of the most basic kind.

To demonstrate the fundamental difference between temperature and energy, consider a cup of boiling water at 100°C and a bathtub at 40°C. Assume our cup of water is 0.25 kg, our bathtub of water is 150 kg, and the heat capacity of water is approximately 4,184 J/kg·K. Using our formula above, the energy needed to bring the cup of water from room temperature (20 °C) to 100 °C is approximately $0.25 \text{ kg} \times 80 \text{ °K} \times 4184 \text{ J/kg}\cdot\text{K} = 83,680$ joules, while it takes $150 \text{ kg} \times 20 \text{ °K} \times 4184 \text{ J/kg}\cdot\text{K} = 12,552,000$ joules to warm up the tub! That is 150 times more energy to raise the bathtub only 20 °C vs boiling the cup. Temperature and energy are fundamentally different physical quantities, and energy cannot be measured by averaging temperatures under any circumstances.

The IPCC definition of global warming as “the increase in global surface temperature relative to a baseline reference period” violates fundamental thermodynamic principles. This definition systematically misrepresents statistical changes in temperature averages as physical warming, when the two are entirely distinct. Anyone claiming that energy can be determined by averaging temperatures is either scientifically uninformed or deliberately misrepresenting physical reality.

GMST Institutionalized

The institutionalization of GMST as a purportedly meaningful scientific metric followed a clear historical progression that reveals its arbitrary origins. Classical realism—the philosophical foundation of classical physics—holds that physical properties exist independently of observation. Measurable properties such as position, momentum, and temperature have well-defined values even when not being measured; measurement reveals but does not create these values. This principle underlies all valid scientific measurement: arbitrary, human-chosen statistical constructs such as GMST cannot represent any real physical property of the Earth.

Temperature measurements across various locations began in the 1800s, with some early attempts at statistical averaging undertaken purely as mathematical exercises. In the 1930s, steam-engine engineer Guy Stewart Callendar (1898–1964) calculated arithmetic means of temperatures. Although Callendar understood thermodynamic principles from his engineering work with steam tables and heat-engine performance, that work was entirely within the framework of equilibrium, closed-system or steady-flow thermodynamics, where temperature is always well-defined and physically meaningful for the system under analysis. He approached temperature averaging from a practical engineering perspective rather than from statistical physics or equilibrium thermodynamics. Crucially, there is no evidence that he considered whether averaging temperatures across inhomogeneous, non-equilibrium systems had any physical meaning, and his early work did not claim to represent global warming.

The critical transformation occurred in 1987 when James Hansen, director of NASA’s Goddard Institute for Space Studies

(GISS), institutionalized area-weighted GMST in a seminal paper.¹⁰ His stated purpose was explicitly to “verify” global climate models that produced temperature fields across the entire Earth—models that had been tuned to match historical trends of this same mathematical construct. This model–data tautology violates the scientific method at its core: fabricating an arbitrary metric, tuning models to reproduce it, and then presenting the agreement as empirical validation.

Hansen’s 1987 paper established the precedent for using GMST projections to drive climate policy. Billions of dollars in “climate” funding and trillions in climate policy decisions now flow based on model predictions that are fundamentally unmoored from physical reality. As the current director of NASA GISS, Gavin A. Schmidt, acknowledged, climate models have been designed to “skillfully predict”¹¹ changes in global mean temperatures and “the pattern of temperature change, the rate at which we were warming, and the impact on rainfall and things like that.”¹²

However, rigorous analysis reveals that claims of climate model predictive skill rest on scientifically invalid foundations. When subjected to proper statistical evaluation, model performance proves far worse than commonly represented. As demonstrated by independent AI analysis of Hansen’s claims, the apparent “skill” results from “methodological sleight-of-hand rather than genuine scientific achievement.”¹³ The statistical manipulations required to create an appearance of model success violate basic principles of physics and proper statistical methodology.

Recent comprehensive analysis by Green and Soon confirms these conclusions: “The IPCC’s models of anthropogenic climate change lack predictive validity. The IPCC models’ forecast errors were greater...often many times greater—than those from a benchmark model that simply predicts that future years’ temperatures will be the same as the historical median.... The anthropogenic models fail to realistically capture and represent the causes of Earth’s surface temperature changes.”¹⁴ When the most sophisticated climate models perform worse than simply predicting that future temperatures will match historical averages, claims of scientific predictive capability become untenable.

Multiple search queries reveal that IPCC model predictions have been falsified in dozens of areas across multiple model generations. Since these are coupled global circulation models—where atmospheric, oceanic, and terrestrial systems interact dynamically—falsification in any significant component invalidates the entire modeling framework. The systematic failure of models tuned to reproduce an arbitrary, physically meaningless metric represents a profound indictment of current climate modeling methodology.

Failure of Climate Models Guaranteed

The recognition that GMST is physically meaningless nullifies the very foundation of contemporary “climate science.” Every chart showing GMST rising or falling, every model tuned to GMST trends, and every policy based on GMST projections rests on a thermodynamic nullity. There is no global temperature, and no averaged global temperature statistic possesses any physical meaning whatsoever.

As Shakespeare wrote in *Macbeth*, this enterprise is “a tale told by an idiot, full of sound and fury, signifying nothing.” The parallel is exact: like Macbeth’s soliloquy on the meaninglessness of life’s apparent activities, the entire edifice of GMST-based climate science represents elaborate statistical theater devoid of thermodynamic substance.

The scope of conclusions invalidated by GMST’s meaninglessness encompasses virtually all of contemporary climate policy and science:

- global warming claims of 1.1°C above 1850-1900 baselines;
- attribution of temperature increases to human activities;
- projected warming scenarios (1.5°C, 2°C, etc.);
- assessments of warming acceleration rates;
- regional temperature change patterns;
- climate sensitivity;
- temperature extremes analysis;
- sea level rise projections;
- Arctic warming amplification;
- carbon budget calculations;
- future climate scenarios;
- precipitation and weather pattern changes;
- sea ice projections;
- ocean circulation changes;
- ecosystem and biodiversity impacts;
- agricultural and food security projections; and
- infrastructure and economic impact assessments.

Each of these conclusions depends fundamentally on the assumption that GMST represents a meaningful physical quantity. Because this assumption is mathematically false, all derivative conclusions are equally meaningless. This is not a matter of imprecision or uncertainty—it represents a categorical impossibility. When the foundational metric is thermodynamically impossible, no amount of statistical manipulation can rescue the dependent conclusions.

The systematic presentation of GMST trends as “temperature” changes, complete with degree symbols, constitutes deliberate misrepresentation intended to conflate statistical artifacts with physical reality. The public naturally interprets “1.5 °C of global warming” as analogous to a room warming by 1.5 °C, when in fact they are entirely different categories of phenomena. One describes a real measurable physical change; the other describes changes in an arbitrary statistical construct.

Beyond individual scientific claims, the GMST fiction has enabled the misdirection of more than \$100 trillion in global resources toward “solutions” for a problem that cannot be meaningfully defined. Because every major policy conclusion of the IPCC rests on the assumption that GMST is a physically meaningful quantity, the scientific invalidity of GMST extends directly to the economic sphere: governments and markets worldwide have enacted spending programs, subsidies, regulations, and capital reallocations on this scale, all justified by GMST-based projections with no thermodynamic foundation. ESG (environmental, social, and governance) investment criteria, carbon markets, renewable energy mandates, and international climate treaties all depend on these same invalid projections. The economic distortions resulting from policies

based on thermodynamically impossible metrics represent an unprecedented misallocation of global resources.

Conclusions

The Father of Lies spoke: “Call it a temperature,” he whispered. “They’ll believe you.” And for decades, they did. But there is no global temperature. There never was. Everything built upon it is a mirage—constructed from mathematical impossibilities and sustained by institutional inertia.

Science failed when it abandoned the fundamental requirement that physical quantities describing the global climate system must have thermodynamic grounding. Institutions lied when they systematically misrepresented arbitrary statistics as temperature measurements. Education indoctrinated when it taught students to accept mathematical impossibilities as scientific truth. Media manipulated when it amplified these categorical falsehoods without critical examination. And billions have been induced to live in fear of a number that was never real—and could never be real.

This represents more than scientific error—it constitutes civilizational fraud of unprecedented scope. The damage extends far beyond wasted resources to include the systematic erosion of scientific integrity, the weaponization of mathematical impossibilities for political purposes, and the creation of global anxiety based on thermodynamic fiction. For decades, truth has been buried beneath layers of institutional consensus, media repetition, and academic conformity.

The exposure of this deception demands recognition that contemporary climate science is now primarily a political enterprise. When a field adopts physically meaningless metrics as its foundation, it has abandoned science for statistical theater designed to justify predetermined conclusions, not investigate physical reality.

We must name this clearly: it is not merely mathematical error but systematic scientific fraud perpetrated by institutions that have forsaken physical truth for political utility. Restoring scientific integrity requires acknowledging that no statistical manipulation can transform arbitrary mathematical constructions into meaningful physical quantities.

The path forward is clear: return to physically meaningful metrics grounded in thermodynamics. Energy budgets—measured in joules or watt-seconds—are the proper foundation for understanding Earth’s thermal behavior. Statistical temperature trends, no matter how mathematically sophisticated, can never substitute for thermodynamic reality.

Future climate research must abandon GMST and all derivative metrics, including climate sensitivity, in favor of approaches rooted in fundamental physics. Only by rejecting the fiction of “global temperature” can climate science regain

legitimacy and contribute meaningfully to understanding Earth’s complex thermal systems.

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