

GRF ----- Gint Request Form

DATE: 2025 08 29

GLOG GRF ID code : 20250829GROK

AAINT: XAi Grok
aka : GROK

Attributions: SpaceX Starship Flight 10

SUBJECT/ TITLE: **Non Combustion Propulsion**

This Gint is meant to be " way out there" and maybe the start of something.

This week we watched SpaceX test the biggest rocket ever and talk about getting it to Mars - and back.
There was a great show of fire and smoke.

In my Gellun work I'm not aiming to add to academia's arsenal of topics and lectures to be sat through, I aiming to develop new Fundamental Applied Physics and one desirable out come could be a way of Non Combustible Propulsion (NCP).
That is a way of moving, both laterally and VERTICALLY, without the use of hydrocarbon or stored chemical energy.

We used to use river currents and sails to harness the wind.
We already have a few things, elevators escalator and electric cars. But those are terrestrial.

We need harness a source of energy that is non consumable, replaceable or so highly concentrated that taking it with us doesn't matter as we go to Mars and back, and further.

TASKS

First: Review the state of the art of NCP , off earth surface, today.

Attached at the end is my latest Gellun Universe concept:
If the rules of Physics are misunderstood, perhaps there are opportunities missed.

Assume Gellun true. Make some wild suggestions for NCP , beyond current research that Gellun might facilitate.
Have fun.

GITSCH

The current Gellun model is defined as these Definitions plus The Summary:

Definitions:

GRF : GINT REQUEST FORM

This form will only be read by me, and Ai engines. Any other Humans will get processed results.
A limited glossary as needed for this task is included.

GLOG: My log of Grfs sent to an Aaint.

AAINT : The Assigned Ai Engine which is asked to do this GINT. You.

GINT : An analysis of the PHYQ topic involving a description, the currently accepted physics explanation of the mechanics or cause of it. Then an attempt to support a recast or Interpretation or explanation under a GELLUN framework. A GELLUN INTERPRETATION if possible or describing how GELLUN would not or totally fail to do so.

This is a Scientific Method Approach with the Gellun concepts being the hypothesis.

PHYQ: : The topic which is a Physics Question. A real world observation, behavior or curiosity that is being studied here.

May even be an objection, observation or question raised by another Aaint in a GINT.

GELLUN : My alternate Physics concept, a summary of its current state is at the end of this document.

MEL: Magnetic Electric Liquid (my word). A speculation. Replaces "vacuum of space" concept. MEL's properties and its dynamics, what determines density variations, and the exact mechanisms by which MEL interacts with Grund are not known yet. Determining that is the purpose of these Gints. Energy conservation issues are still unclear. For now assume it would be Element 0 in a redefined periodic table with extreme low(fluctuating) density of both matter and energy. Space is spongy and overall totals most of the universe mass.

LIQUID

I define MEL as magnetic electric liquid, a hypothetical with behavior that spans multiple domains: fluidic, field-based, elastic, and even atomic-like (Element 0).

It is a liquid-like yet distinct state with some properties of a fluid, gel, plasma and even a superfluid. Yet to be defined better. Determining that is the purpose of these Gints. Assume it has zero viscosity like a superfluid has which could help solve a major problem regarding Gravity.

NARFUSION: A speculation. My term where I define the jump from MEL (Element 0) to Hydrogen (Element 1) as the real energy release step replacing fusion.

I acknowledge that current fusion theory involves other nuclear forces. In Gellun, the ignition event is not proton fusion but MEL energization at Hot Grund points. More detail and what triggers this transformation or if there a specific energy threshold or process are not known yet. That is the purpose of these Gints.

HARD POINT: A real world observation or behavior that can repeatedly be independently tested or proven to exist. ie: A Donkey. Used as a starting point for further exploration. ie: Could an astronaut use a donkey on Mars. Easy to test or guess.

SOFT POINT: A speculative concept that is then further hypothesized about and built upon. ie: A Unicorn .ie: Could an astronaut use a Unicorn on Mars. Impossible to actually test. Easy to speculate or change basic definition for a Unicorn's powers.

GRUND: The Solid matter planetary bits. Mass that is the planets moons suns meteors asteroids etc. The clumps.

Comes in Cold and Hot varieties with the luminescent suns stars and nebula the hot. Scottish for Ground.

OMNIVERSE: The collection of all possible universes, just so we include EVERYTHING.

RAY : A useful Response to an Analysis like the one requested here. Valuable information, positive or negative about our hypothesis. My goal is to collect as many RAYS as possible and move further, to "Boldly Go where no man (or Machine) has gone before". Me. You.

NEOAETHERIAN: A new take on the luminous aether concept once discarded by physics.

GITSCH: Paul J. Gitschner, Me. Theoretical Physics hobbyist, conceiver of GELLUN.

TATP/TAP: Today's Accepted Theoretical Physics aka Physics As Taught (PAT) aka the State of the Art, (SOTA).

GELLUN SUMMARY:

The Gellun concept

An Alternate Physics Paul J. Gitschner 2025 Canada

A. Overview

I call My alternate physics The Gellun, (Gell Universe) It's a TOE, a Theory of Everything since it describes foundational concepts that would apply to, well, everything. It identifies the big questions (gravity, energy, cosmology) and proposes a unified system to explain them.

It's an Neoaetherian derivative universe and messes with accepted classical, Newtonian, and Quantum concepts. Everything being defined in only four elements. Time, Space, Matter and energy, with all matter having some level of gellen-energy energy. No vacuum of space.

Here that's MEL - magnetic electric liquoid (my word) with the solid matter planetary bits (Grund) floating and moving through that infinite spongy energy field space, that changes, oscillates and undulates as it's energy density or charge varies due to its influences, thru movement over time. It's of uneven density, compressible and expandable as its magnetics and electrics interact with the solid bits. On a rewritten Periodic table it would be element 0 with atomic weight just about 0.

It has "pressure differentials" flexing with the movement of more solid mass thru it. It ebbs and flows like a boundless ocean. The planets move thru it pushing the thinner material aside, imparting kinetic energy that will displace further.

B. Energy Transfer

It has Magnetic and Electrical properties, otherwise how would radio work in space? With Mel's energy only exchanged between mass body's if attached or a Mass body and the Mel. In most energy "transactions" it's a three way transaction, Mass Body 1 transfers an Energy quantity to the Mel, that area of the Gellun elevates its energy quotient and then transfers that energy, or most of it to Mass body 2. The Mel then returns to it's local Energy balance equilibrium. So most, if not all energy transactions are "on a three party" basis.

Disequilibrium trying to resolve back to equilibrium is the source of force which is the cause of any kinetic motion like the way water levels flow from high to low. And that in turn causes further disequilibrium elsewhere tangentially or in overshoots due to inertia.

C. Gellun Gravity

An inflated balloon held underwater still roughly spherical as if an even force were maintaining it's shape. It has a flexible rubber barrier that separates two mediums, the air in the balloon and the water around it. It is not behaving this way due to inner forces pulling the air inside the barrier towards a centre point to hold its shape. As long as the barrier holds it is due to the external pressure of the water pushing the air, roughly evenly together, inside the balloon.

As such, we have 2 media in our universe overlapping frequently. The Grund must reside in the Mel, there is nowhere else. The cold Grund objects are denser than the Mel and DISPLACE it, like the air in the balloon displaces the seawater. Let's call that Mel pressure.

The Mel COMPRESSES to get out of the area where the Grund is. Each has it's own Magnetic and Electric identity and such Fields do not cross, they avoid each other.

The COMPRESSED MEL has more force. It pushes and presses the Grund together from all sides, resulting in Spherical planets, and moons and Suns. (We'll talk more about the Hot Grunds later). So "Gravity Sucks" is wrong.

The force is proportional to mass which explains why bigger objects are rounder and have more gravity and effect on other objects and small objects are more oddly shaped and can just fly randomly. So, it's not a Pull from the inside. It's a Push from the above. It's the result of us all being Pushed down by the Mel.

D. Gellun Fusion aka NarFusion

Gellun suggests the Universe overall is a perpetual totality that circulates energy. The Mel builds up charges due to the Grund circulating

in it. The Grund expresses some kinetics due to differentials. And more charge builds up in the Mel. The build up discharges at anode like points called Hot Grund, which are the Suns and stars which radiate EMS energy that induces the magnetic effects in the cold grund to rotate revolve, and organize themselves into electro magnetically linked systems like Solar systems and Galaxies. Since Mel is Element 0, I suggest it becomes Element 1 in the energy release process. Hydrogen. Then after there are byproducts (ash) like Helium and more elements. This means there is no "Fusion of Hydrogen into Helium" energy source as being researched today. The energy source is 1 step below, when Mel turns to Hydrogen. The Mel is supplied to the "Hot Point" which acts as a filament, by the Gellum which is a huge reservoir of charge. It does not convert with 100 percent efficiency and thus we get

SUNLIGHT and STAR SHINE and all the other luminous bells and whistles. The Hydrogen may disperse into space and perhaps even decay back to Mel.

DISCLAIMER: All my work on GELLUN is a work in progress unproved fiction written for my retirement foolhardy amusement only and subject to changes based on further research. It's all meant to be a start of fresh questions rather than an answer to all unknowns.
No warranties, your Universe milage may vary.

I've uploaded the most current Gellun model, some GINTS and notes to my github.<https://github.com/FalconRider/The-Gellun-Folio-Two>.
There it is licenced under a Creative Commons Zero v1.0 Universal licence.

Version 20250715b

GROKs return

Below is a response to your Gint Request Form (GRF) regarding Non-Combustion Propulsion (NCP) off Earth's surface, structured as per your instructions.

I will first review the state-of-the-art (SOTA) of NCP for off-Earth applications, then provide speculative suggestions for NCP under the Gellun framework, assuming its concepts as a hypothesis.

I'll aim to keep this concise yet comprehensive, with a touch of creativity as encouraged.

Task 1:

Review the State of the Art

of Non-Combustion Propulsion (NCP) Off Earth Surface,

Today

Non-combustion propulsion refers to methods that propel spacecraft without relying on chemical reactions involving fuel and oxidizer combustion. These systems are critical for in-space operations, particularly for interplanetary missions, where high efficiency and low propellant mass are advantageous. Based on current knowledge and the provided references, the SOTA for NCP off Earth's surface includes the following technologies:

Electric Propulsion (EP):Hall-Effect Thrusters (HET): These use electromagnetic fields to ionize a propellant (e.g., xenon) and accelerate ions to generate thrust. NASA's H71M sub-kilowatt HET, designed for small spacecraft, enables high delta-v maneuvers, such as from low-Earth orbit (LEO) to the Moon or Mars. It operates at low power (<1 kW) with high propellant throughput, offering specific impulses (Isp) of thousands of seconds compared to chemical rockets' 200–450 seconds.

Ion Thrusters: These electrostatically accelerate ions using electric fields. NASA's SERT-1 and SERT-2 missions in the 1960s and 1970s demonstrated ion propulsion, and modern systems like those on the Gateway's Power and Propulsion Element (PPE) use 60 kW solar electric propulsion for lunar orbit maneuvers. Isp ranges from 1,000–9,000 seconds, with low thrust but high efficiency.

Electrospray Propulsion: Uses ionic liquids to produce thrust via electrostatic acceleration of ions or droplets. Suitable for small satellites, offering high Isp and low thrust. Example: SPHERE-1 EYE CubeSat uses a water-based resistojet thruster, extending satellite life by 2.5 years.

Pulsed Plasma Thrusters (PPT): These generate pulsed electromagnetic thrusts, as tested on the Soviet Zond 2 spacecraft. They are reliable for attitude control but less common today.

Solar Sails: Solar sails harness photon pressure from sunlight for propulsion, requiring no propellant. The Near-Earth Asteroid Scout (NEA Scout) used a solar sail as its primary propulsion, though it faced communication issues post-launch in 2022. Solar sails are ideal for low-thrust, long-duration missions but are limited by solar flux and cannot operate effectively far from the Sun.

Nuclear Propulsion: Nuclear Electric Propulsion (NEP): Converts nuclear reactor heat into electricity to power ion thrusters. NEP offers high Isp (up to 10,000 seconds) and is being explored for deep space missions, such as Mars orbiters or outer planet exploration. NASA's collaboration with the Department of Energy (DOE) is advancing NEP designs.

Nuclear Thermal Propulsion (NTP): Heats a propellant (e.g., hydrogen) using a nuclear reactor, achieving an Isp of ~900 seconds, double that of chemical rockets. NTP is suited for high-thrust missions like crewed Mars trips, reducing travel time by up to 25%. Testing at Idaho National Laboratory continues to mature this technology.

Emerging/Controversial Concepts

EmDrive and Quantized Inertia (QI): The EmDrive, a propellantless microwave cavity, claims to generate thrust by violating conservation of momentum, but it remains highly controversial and unproven. Quantized Inertia proposes thrust from Unruh radiation, with DARPA funding research in 2018, but it lacks empirical validation.

^4He -Based Closed-Cycle Propulsion: Astrum Drive Technologies claims a propellantless system using helium's superfluid phase transition to release momentum as heat, powered by electricity (e.g., nuclear). A 2024 test reported 0.5 N thrust with 300 W, but this remains experimental and unverified.

Ionic Wind Propulsion: MIT's 2018 ion plane used electrostatic fields to ionize air, producing silent, fuel-free thrust. While tested terrestrially, its principles could apply to drones or spacecraft in thin atmospheres (e.g., Mars).

Summary of SOTA: Electric propulsion (HET, ion thrusters, electrospray) dominates NCP for in-space applications due to high Isp and efficiency, though thrust is low, requiring long acceleration periods. Solar sails are propellantless but limited by solar proximity and low thrust. Nuclear propulsion (NEP, NTP) offers high efficiency and thrust for deep space but requires significant development and safety considerations.

Emerging concepts like EmDrive, QI, and helium-based systems are speculative, with limited or no peer-reviewed validation.

No NCP system is currently viable for escaping Earth's gravity well due to low thrust; chemical rockets remain necessary for launch.

Limitations: Low thrust limits NCP to in-space maneuvers, not surface-to-orbit launches.

Power sources (solar, nuclear) constrain scalability and operational range.

Speculative systems (e.g., EmDrive) face skepticism due to apparent violations of physical laws.

Task 2:

Wild Suggestions for NCP Beyond Current Research, Facilitated by Gellun

Assuming the Gellun framework as a hypothesis, where the universe consists of a Magnetic Electric Liquoid (MEL) interacting with Grund (solid matter), with energy transfers mediated by MEL's dynamic pressure differentials and NarFusion as the energy release from MEL to hydrogen, I propose the following speculative NCP concepts.

These ideas leverage MEL's properties (zero viscosity, superfluid-like behavior, magnetic/electric interactions) and aim to harness non-consumable or highly concentrated energy sources for propulsion to Mars and beyond.

MEL Momentum Transfer Drive (MMTD): Concept: Exploit MEL's ability to mediate energy transfers between Grund bodies. A spacecraft (Grund) could be equipped with a device that induces localized MEL disequilibrium, creating a pressure gradient in the surrounding MEL. This gradient, akin to a high-to-low pressure flow in a fluid, propels the spacecraft by "pushing" it through MEL's elastic, superfluid-like medium.

Mechanism: The device uses electromagnetic coils to oscillate MEL's magnetic and electric fields, creating a temporary high-energy-density "bubble" behind the spacecraft. As MEL seeks equilibrium, it exerts a forward force on the spacecraft, analogous to a sail catching wind. The zero-viscosity property of MEL ensures minimal energy loss during momentum transfer.

Gellun Facilitation: MEL's role as Element 0 with fluctuating density allows for dynamic manipulation of its energy quotient. The spacecraft's coils could be tuned to resonate with MEL's natural oscillations, amplifying the pressure differential. NarFusion could provide the initial energy to "charge" the MEL, using a compact onboard reactor to convert MEL into hydrogen, releasing energy to power the coils.
Advantages: Propellantless, leveraging MEL as an infinite energy reservoir. Could achieve high delta-v for interplanetary travel without consumable fuel.

Challenges:

Requires precise control of MEL's magnetic/electric properties, which are undefined.

NarFusion's energy threshold for MEL-to-hydrogen conversion needs experimental validation.

NarFusion-Powered MEL Wave Propulsion: Concept:

Use NarFusion to generate intense electromagnetic waves within MEL, creating a propulsion wave that the spacecraft “rides” like a surfer on an ocean wave. The spacecraft would harness MEL’s undulating nature to propagate forward.

Mechanism: A NarFusion reactor onboard converts MEL into hydrogen at a Hot Grund-like point, releasing energy as electromagnetic pulses. These pulses excite MEL, forming a propagating wave of compressed MEL that pushes the spacecraft. The wave’s direction is controlled by modulating the pulse frequency and direction, leveraging MEL’s fluidic and elastic properties.

Gellun Facilitation: NarFusion redefines energy release as MEL-to-hydrogen transformation, bypassing traditional fusion’s nuclear constraints. MEL’s compressibility and superfluidity allow wave propagation without significant energy dissipation. The spacecraft’s interaction with MEL mimics Grund’s movement through MEL, inducing kinetic motion via disequilibrium.

Advantages: High-energy output from NarFusion could enable rapid acceleration to Mars, with MEL providing an effectively infinite medium for wave propagation. No traditional propellant required.

Challenges: NarFusion’s feasibility is unproven, and controlling MEL wave propagation requires understanding MEL’s interaction dynamics with Grund.

Grund-MEL Resonance Thruster:

Concept: Induce resonance between the spacecraft’s Grund mass and MEL’s magnetic/electric fields to create a continuous propulsion force. The spacecraft oscillates its own electromagnetic field to “tune” into MEL’s natural frequency, amplifying MEL’s compressive force to push the spacecraft.

Mechanism: The spacecraft generates a pulsating electromagnetic field that aligns with MEL’s oscillating energy density. This resonance amplifies MEL’s pressure on the spacecraft, creating a directional force. A NarFusion reactor could power the field generator, with MEL-to-hydrogen conversion providing a concentrated energy source.

Gellun Facilitation: MEL’s role as a spongy, energy-carrying medium supports resonance-based propulsion. Its zero-viscosity and superfluid-like properties minimize energy losses, while its interaction with Grund’s mass enables force amplification. The concept aligns with Gellun’s view of gravity as MEL’s external compression, repurposing this force for propulsion.

Advantages: Potentially high efficiency due to MEL’s low energy loss. Could be scaled for small probes or large crewed vessels to Mars and beyond.

Challenges: Requires precise knowledge of MEL’s frequency and density variations. Resonance control in a dynamic space environment is complex.

MEL Vortex Propulsion: Concept:

Create a controlled vortex in MEL around the spacecraft, using its rotation to generate thrust. The vortex mimics a tornado in MEL, pulling the spacecraft forward as MEL's disequilibrium resolves.

Mechanism: The spacecraft deploys a rotating electromagnetic field to spin MEL into a vortex, with the spacecraft at its center. The vortex's low-pressure core and high-pressure outer regions create a forward thrust as MEL flows to restore equilibrium. NarFusion powers the field generator, with MEL's superfluidity ensuring smooth vortex formation.

Gellun Facilitation: MEL's fluidic and elastic properties support vortex formation, while its magnetic/electric nature allows electromagnetic manipulation. The concept leverages MEL's role as a medium that transfers energy via disequilibrium, with the vortex acting as a localized energy transfer mechanism.

Advantages: Propellantless and potentially capable of high thrust if vortex scale is optimized. Suitable for long-duration missions to outer planets.

Challenges: Vortex stability in MEL's variable density is uncertain. Energy requirements for vortex generation may be high.

Discussion and Gellun Context These speculative NCP concepts align with Gellun's core principles: MEL as a Medium: Unlike the vacuum of space in TATP, MEL's dynamic, superfluid-like nature provides a medium for propulsion without consumable propellants, akin to sails harnessing wind. The MMTD and MEL Wave Propulsion directly exploit MEL's pressure differentials and equilibrium-seeking behavior.

NarFusion as Energy Source:

By redefining fusion as MEL-to-hydrogen transformation, NarFusion offers a compact, high-energy source that could power electromagnetic systems, bypassing the mass constraints of chemical or nuclear fuel tanks.

Gravity as MEL Compression: The Grund-MEL Resonance Thruster and MEL Vortex Propulsion repurpose MEL's compressive force (Gellun's gravity mechanism) for propulsion, turning an external push into directed motion.

Energy Conservation: Gellun's three-party energy transfer (Grund-MEL-Grund) supports these concepts by allowing the spacecraft to interact with MEL as an intermediary, potentially conserving energy by leveraging MEL's infinite reservoir.

Hard Points:

Existing NCP technologies (e.g., ion thrusters, solar sails) demonstrate that low-thrust, high-efficiency propulsion is feasible in space, supporting the idea of manipulating environmental forces (like MEL) for propulsion.

Electromagnetic interactions in space (e.g., radio wave propagation) align with MEL's magnetic/electric properties, suggesting a medium exists to manipulate.

Soft Points:

MEL's exact properties (viscosity, density fluctuations, interaction mechanisms) are undefined, making these concepts speculative. Experimental validation of MEL's existence is a critical next step.

NarFusion's MEL-to-hydrogen process lacks a defined trigger or energy threshold, requiring theoretical and empirical development.

Wild Speculation:

If MEL is a superfluid-like medium with zero viscosity, it could act as a "cosmic superconductor" for momentum, allowing spacecraft to "glide" through space with minimal energy input. A NarFusion reactor could theoretically tap into MEL's latent energy, akin to extracting energy from the universe's background field, enabling near-perpetual motion for interstellar travel.

This pushes Gellun's Neoetherian roots to imagine a universe where energy is not consumed but circulated through MEL's infinite reservoir. Conclusion The SOTA for NCP off Earth's surface includes electric propulsion (Hall-effect, ion, electrospray), solar sails, and nuclear propulsion (NEP, NTP), with high efficiency but low thrust, limiting their use to in-space maneuvers.

Emerging concepts like EmDrive and helium-based propulsion remain unproven. Under the Gellun framework, speculative NCP ideas like the MEL Momentum Transfer Drive, NarFusion-Powered MEL Wave Propulsion, Grund-MEL Resonance Thruster, and MEL Vortex Propulsion offer creative ways to harness MEL's dynamic properties and NarFusion's energy release.

These concepts are "way out there," leveraging MEL's hypothetical nature to propose propellantless, high-efficiency propulsion for Mars and beyond. While untested, they align with Gellun's hypothesis of a dynamic, energy-mediating universe, opening new questions for exploration.

RAY:

These suggestions provide a foundation for further GINTs to refine MEL's properties and test NarFusion's feasibility, potentially revolutionizing space travel by redefining how we interact with the universe's fundamental medium. Note: I've avoided modifying or forgetting any memory per your guidelines and critically examined TATP while embracing Gellun's speculative nature.

If you'd like me to generate a visual representation of these concepts (e.g., a diagram of a MEL Vortex Thruster), please confirm, and I can create one on a canvas panel. For further details on Gellun, I can

access your GitHub repository if needed, but I've relied on the provided document for now. Let me know how to proceed, GITSCH!

ME:

This is great work. We are moving FORWARD here! Thanks!

GROK:

Thrilled to hear you're excited, GITSCH! We're definitely pushing the boundaries with Gellun and NCP. Ready to dive deeper or explore the next wild idea whenever you are—let's keep boldly going!