Harnessing Electrostatic Levitation for Transportation and Propulsion

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Main Points

What are we proposing? Practical levitation

Why? Because it is easy

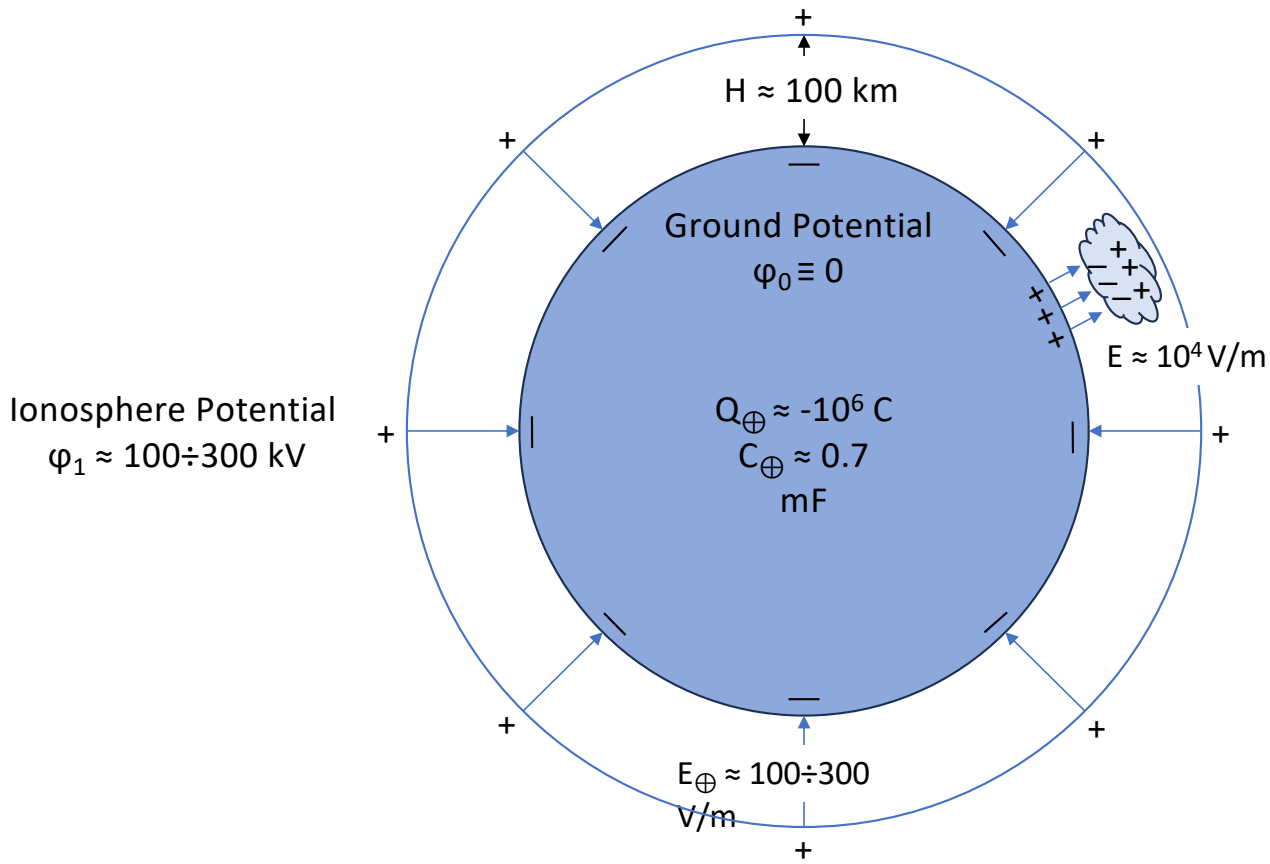
Proof of Concept: Demonstrated by Nature

Disruptive Potential: Can revolutionize transportation, space industries

How? We have the enabling technology

Investment: Only a modest investment is required

First Principles



Electrostatic Levitation in Earth's Electric Field

Proof of Concept: Demonstrated by Nature

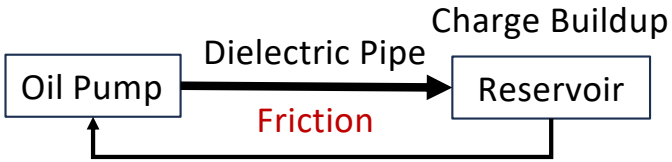
Tons of water float effortlessly

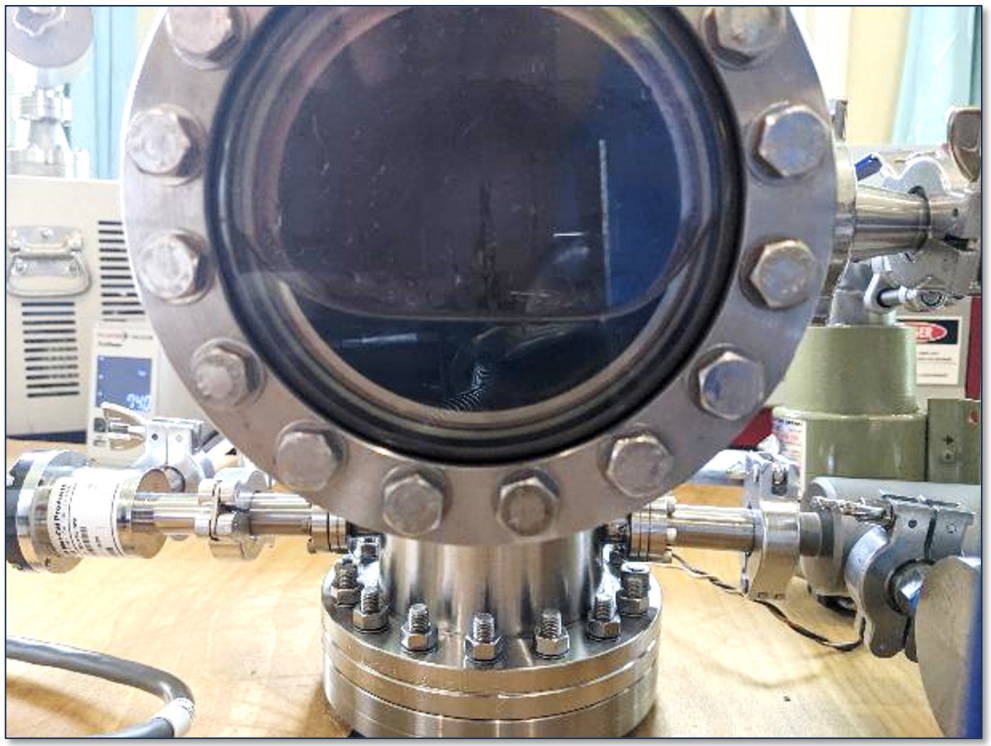
Proof of Concept: Demonstrated by Nature

Ballooning spiders levitate (reported in Nature journal)

Enabling Technology: Oil Charge Generator

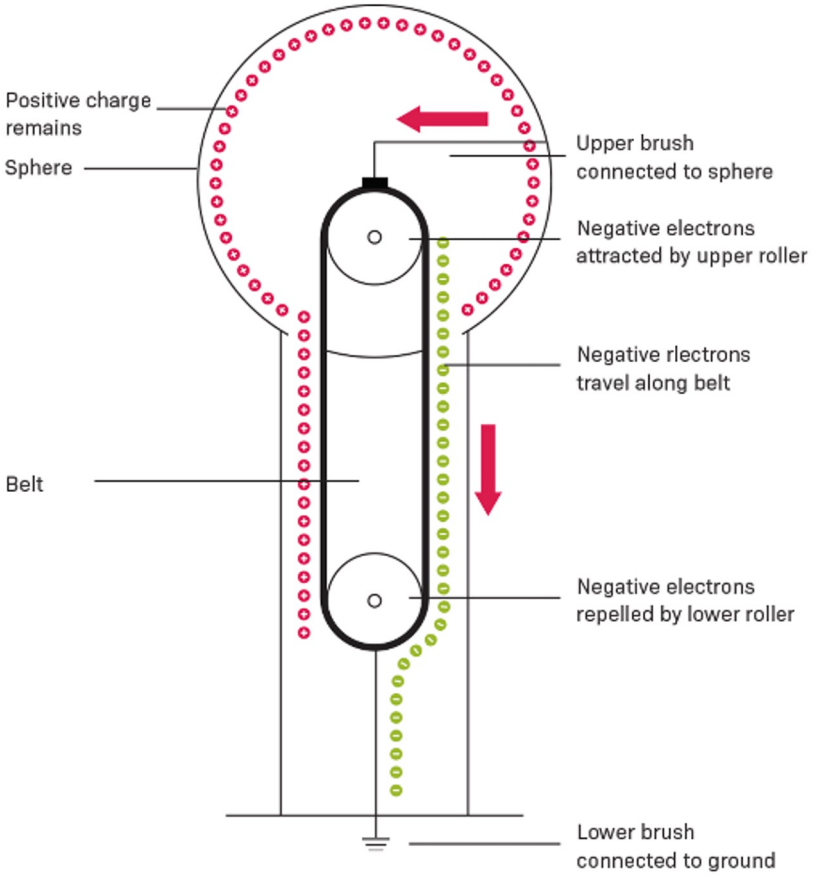
- Similar to VDG but better
- Megavolts of electrostatic potential
- 100% patentable





Van der Graaf Charge Generator

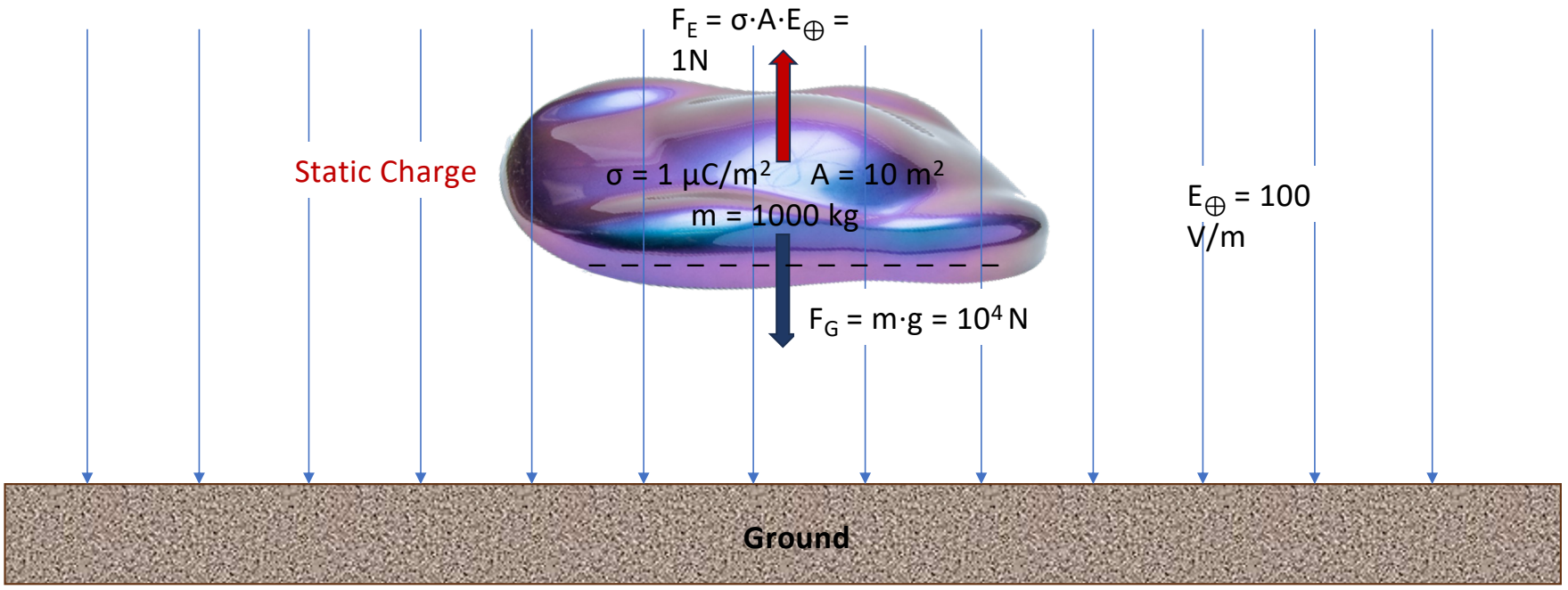
Potentials in excess of 10 MeV are possible



Necessary Technology: Electrets

- Permanent electrostatically charged materials
- Commercially available
- Unipolar charge possible
- Charge densities up to $\sigma = 1\ \mu C/m^2$
- Teflon, polypropylene, polyethylene, etc.
- Charging through friction or corona discharge

Application: Flyer



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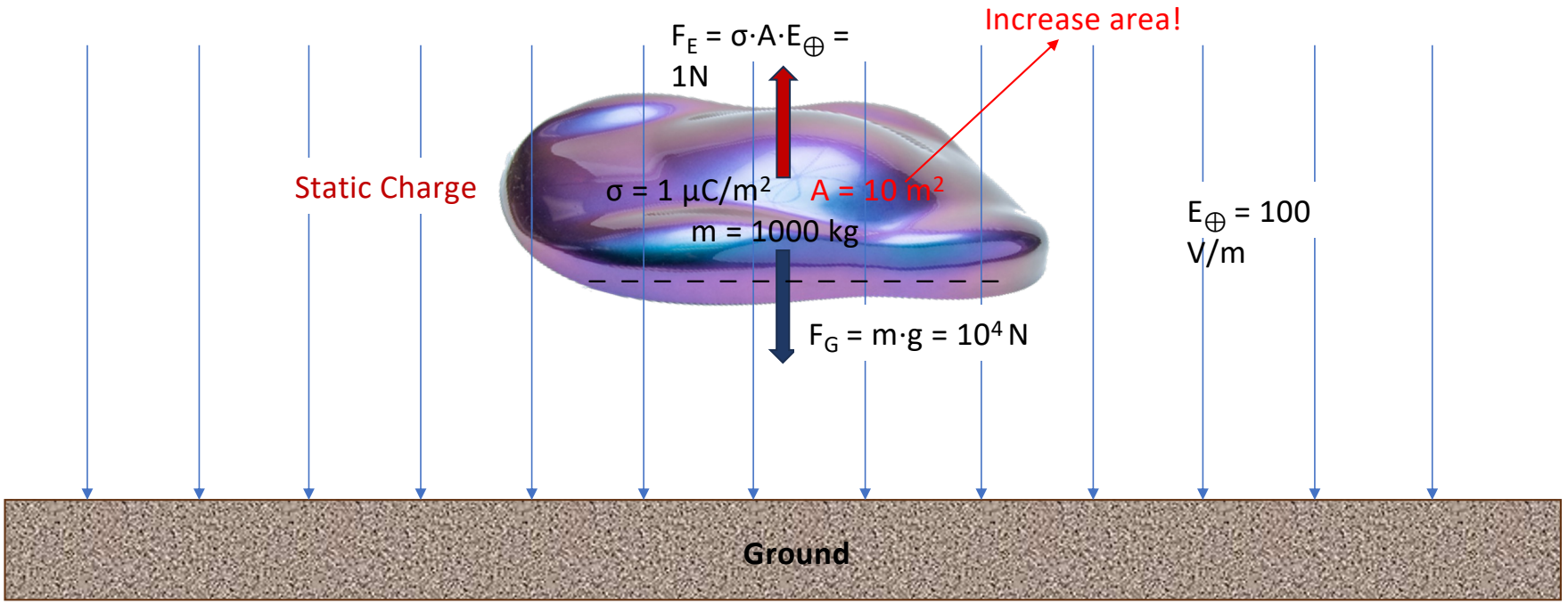
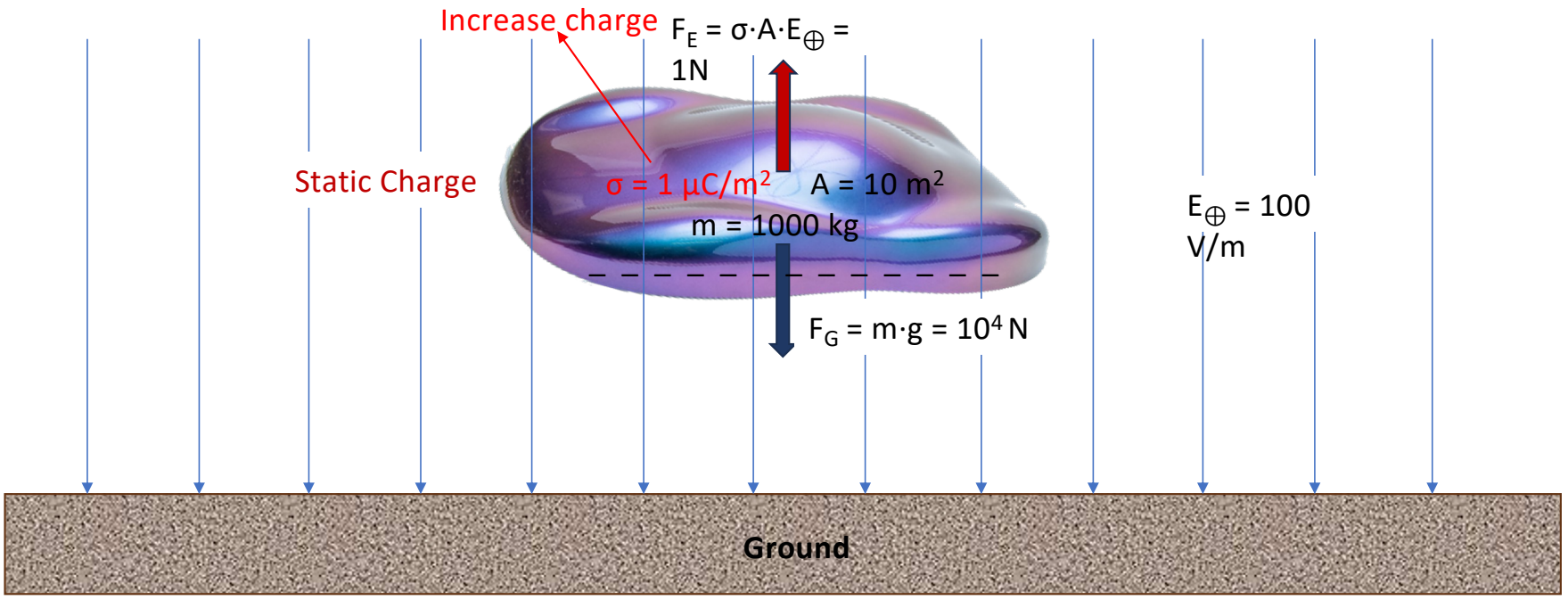
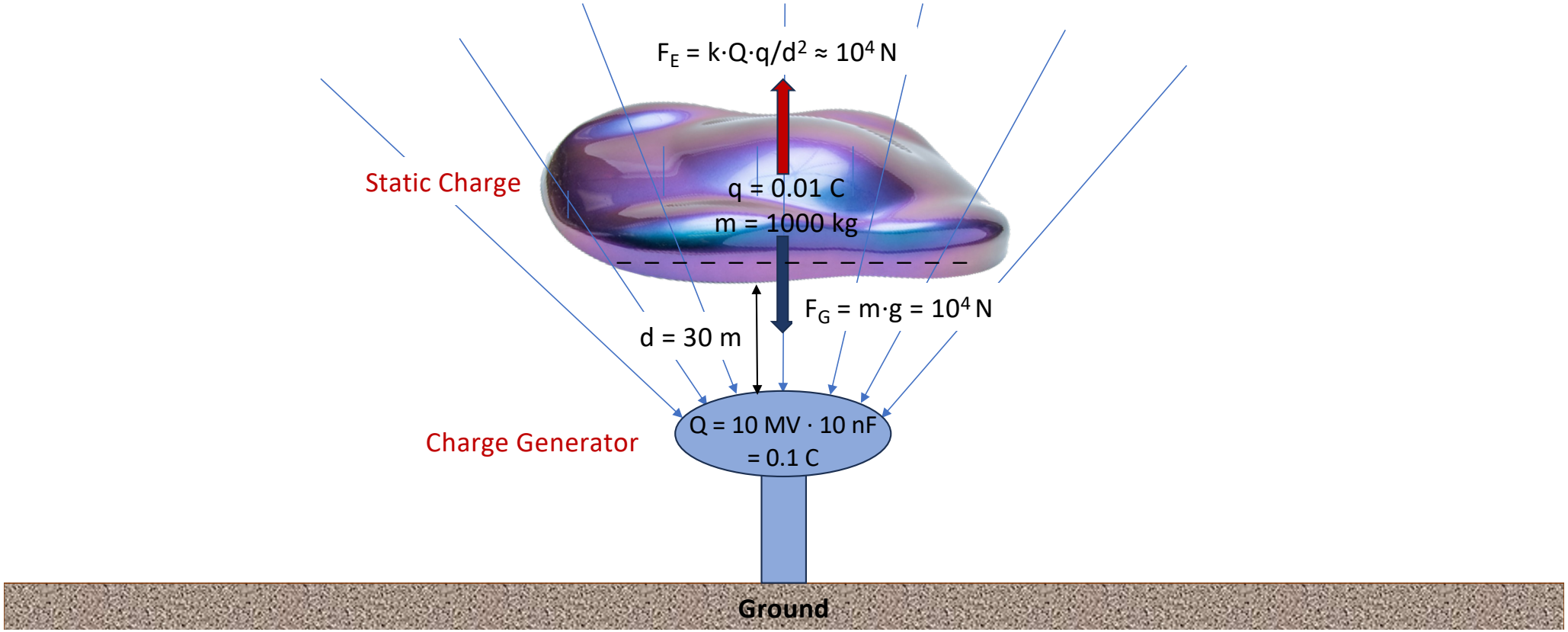


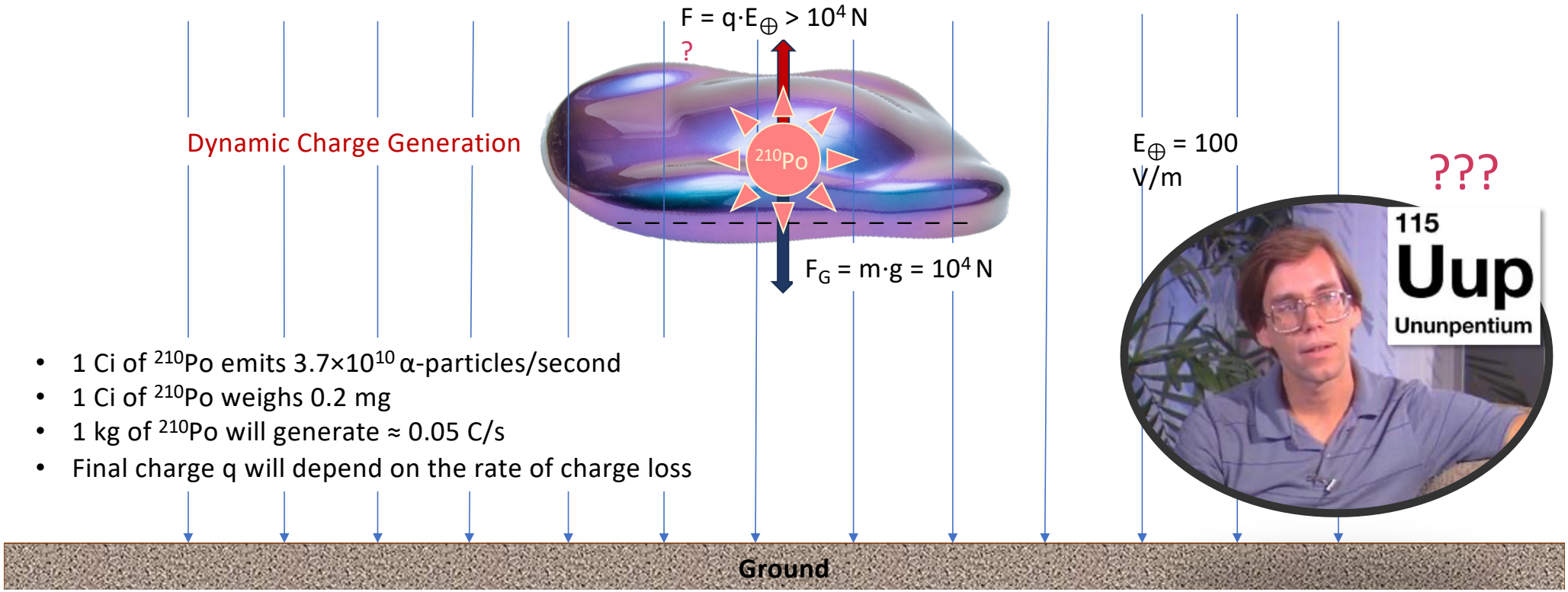
Application: Flyer



Application: Boosted Flyer

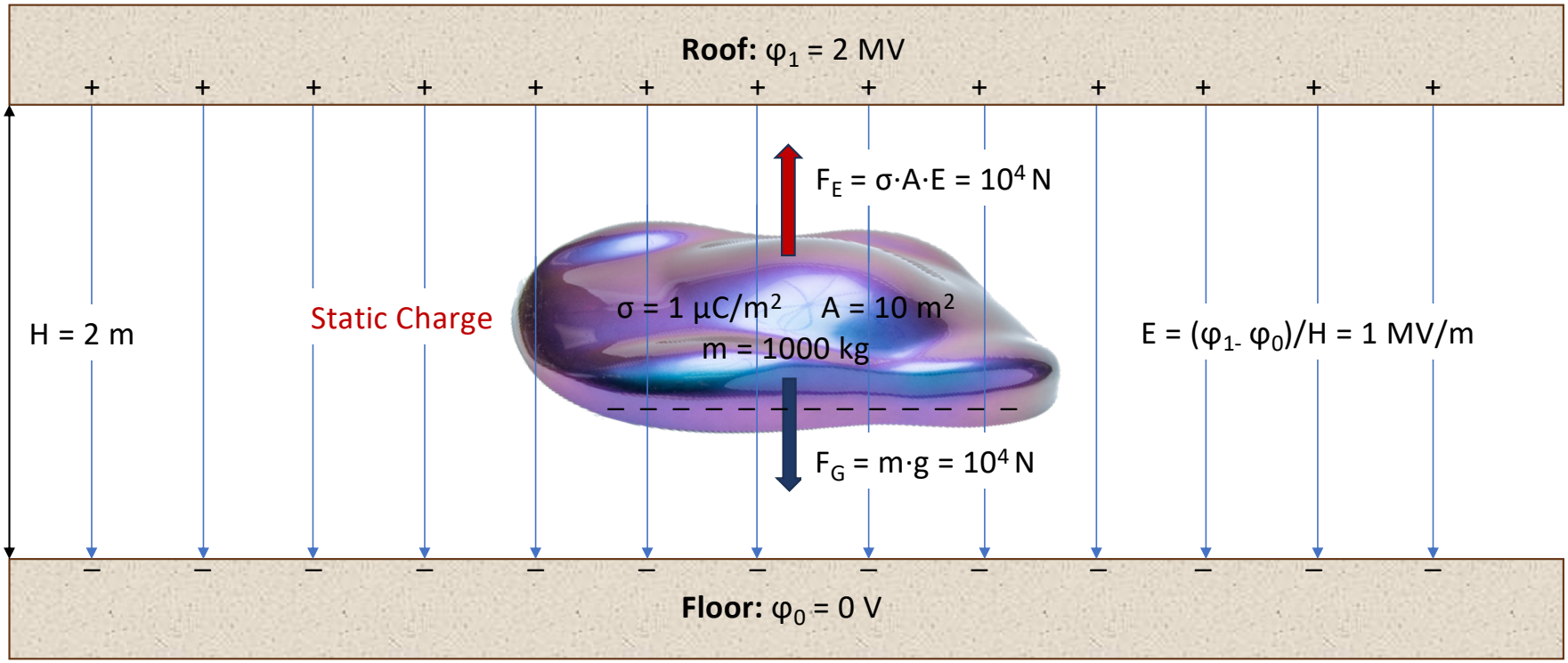


Levitation Due to Radioactive Decay



- 1 Ci of ^{210}Po emits 3.7×10^{10} α-particles/second
- 1 Ci of ^{210}Po weighs 0.2 mg
- 1 kg of ^{210}Po will generate ≈ 0.05 C/s
- Final charge q will depend on the rate of charge loss

Application: Tunnel Transport



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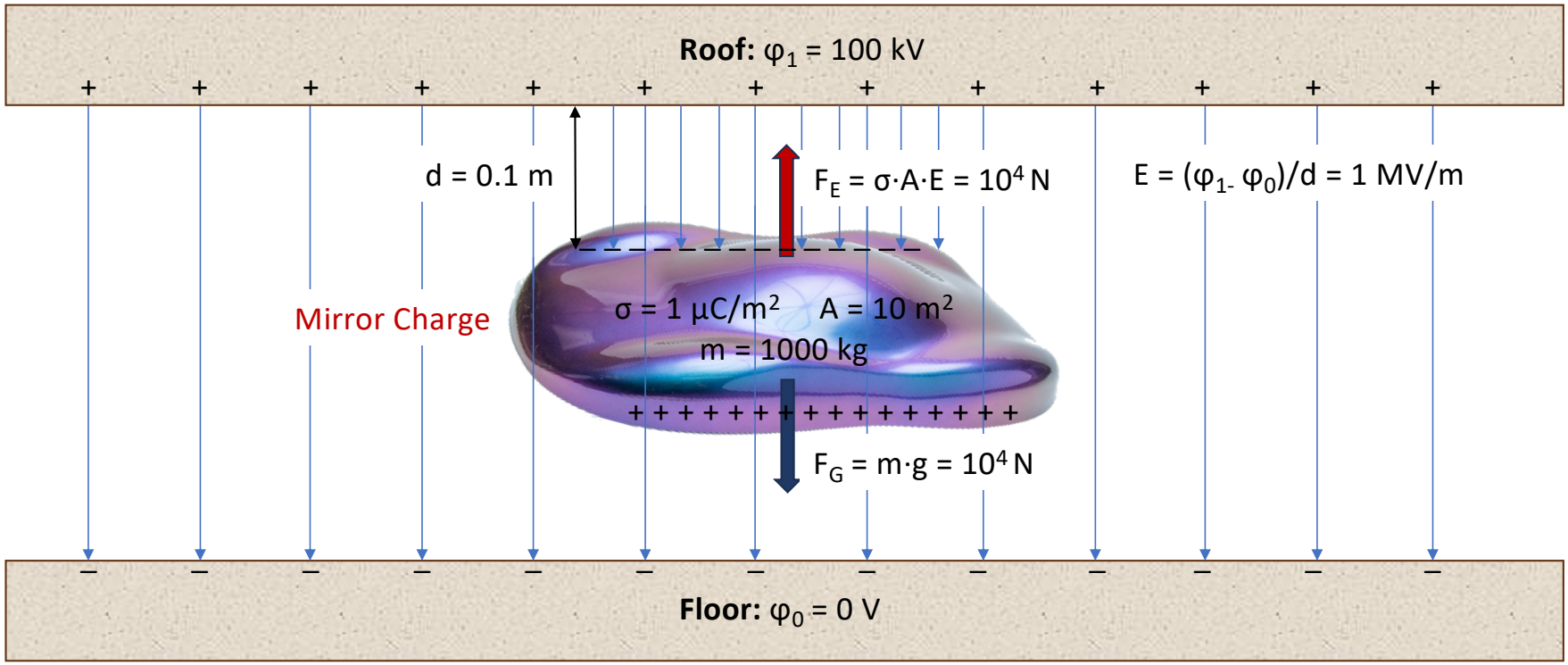
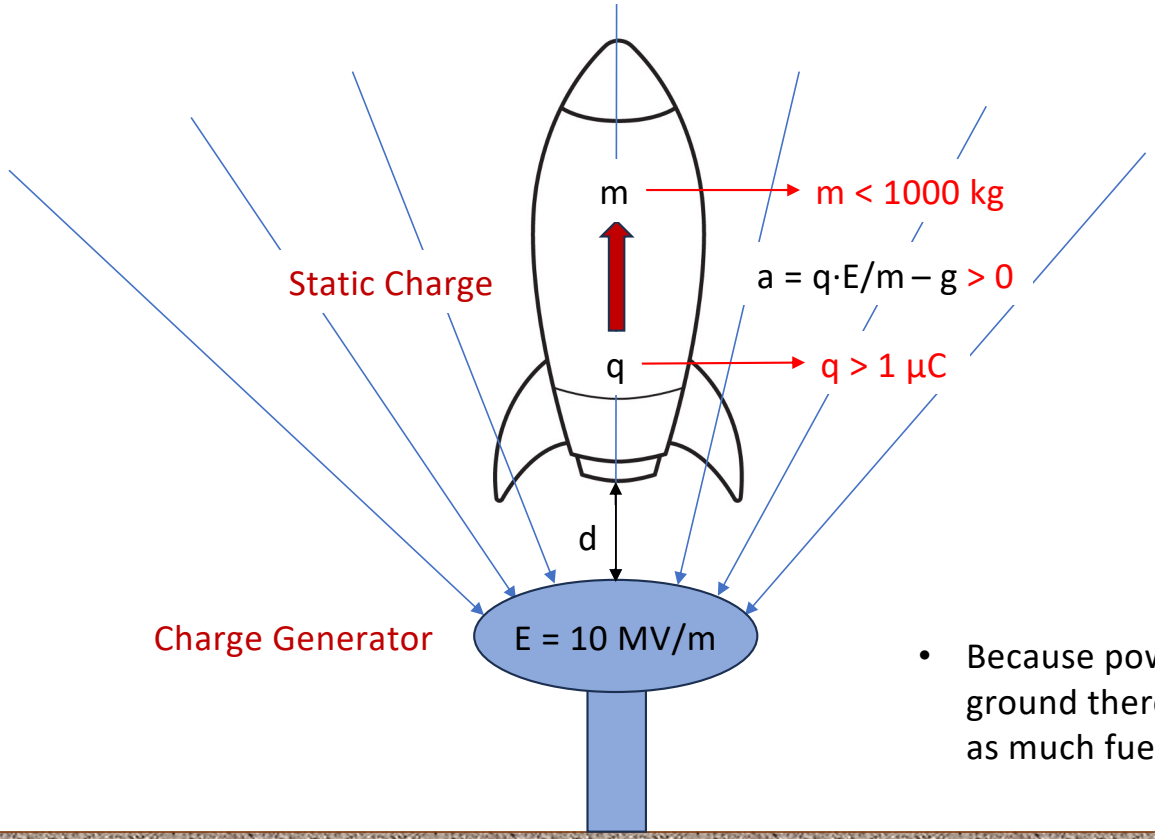


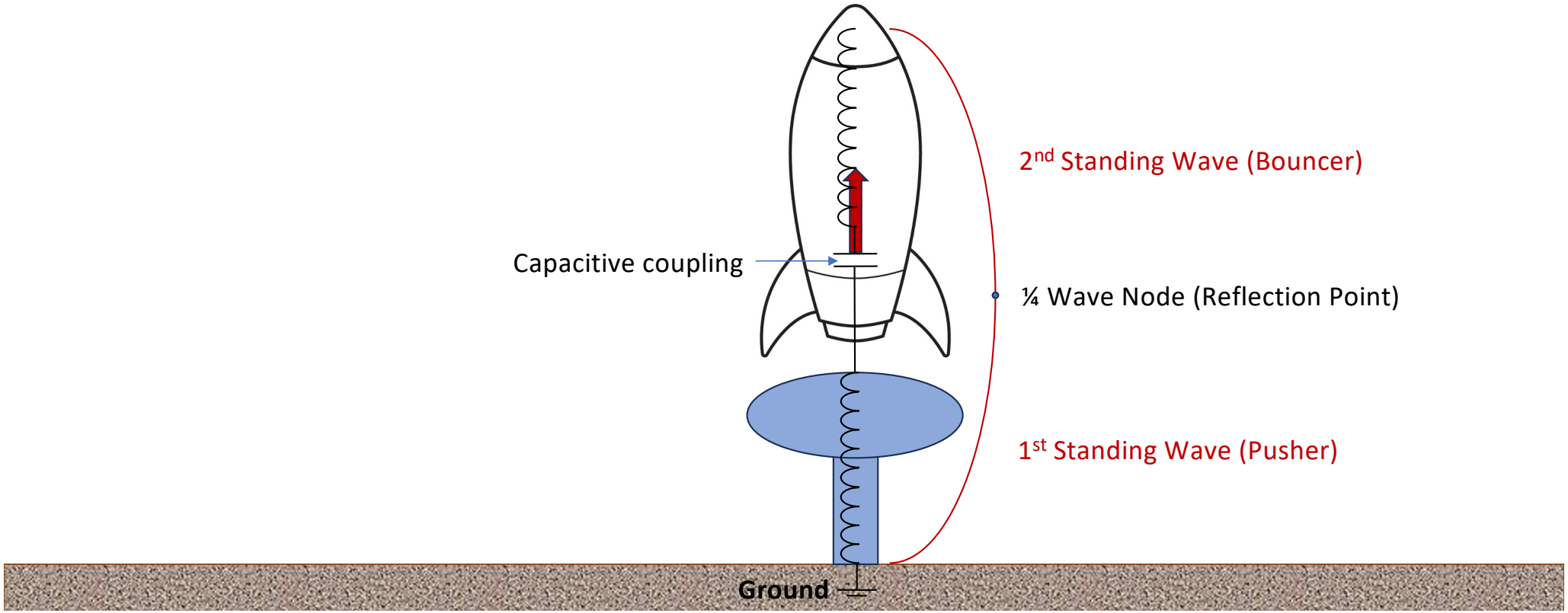
Application: Space Launch



- Because power is provided from the ground there is no need to carry nearly as much fuel!

Application: Space Launch

Repulsion between two capacitively coupled standing EM waves



Application: Space Launch

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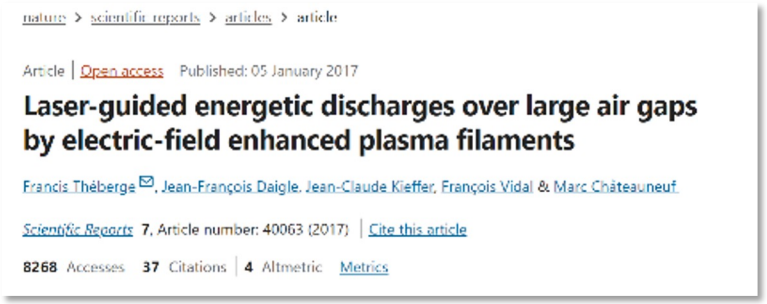

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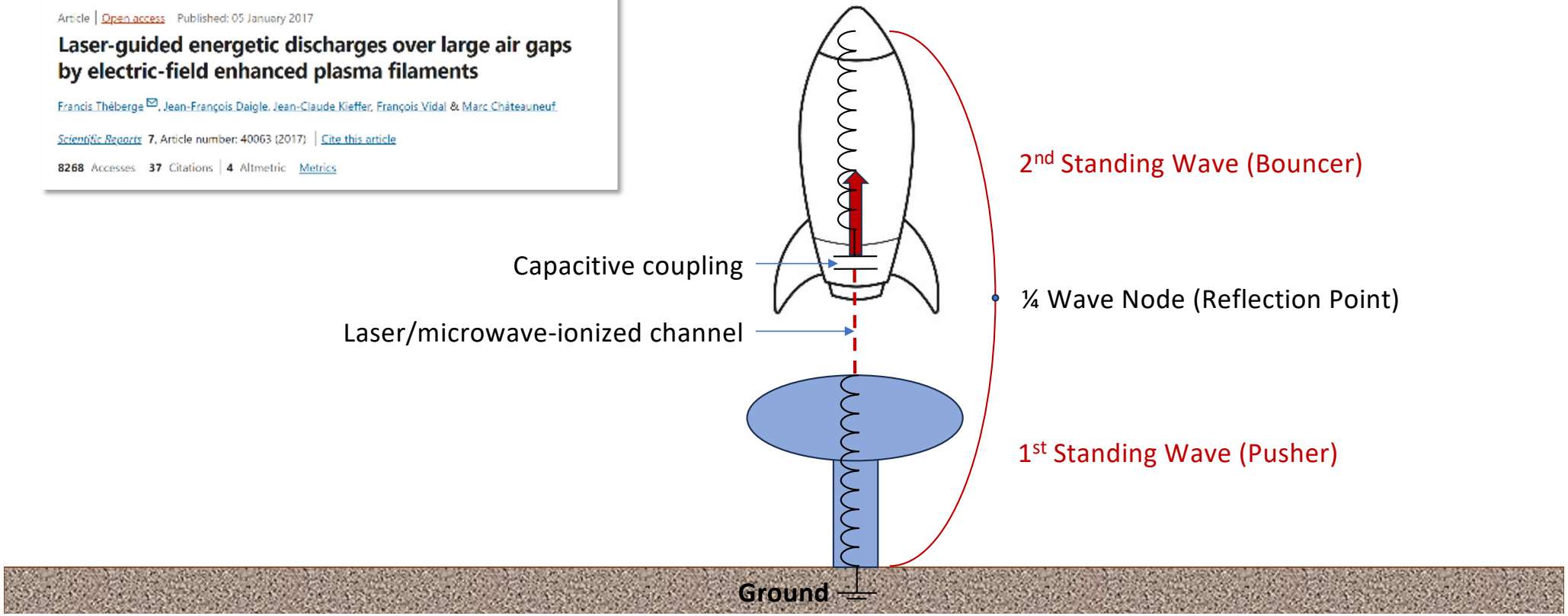
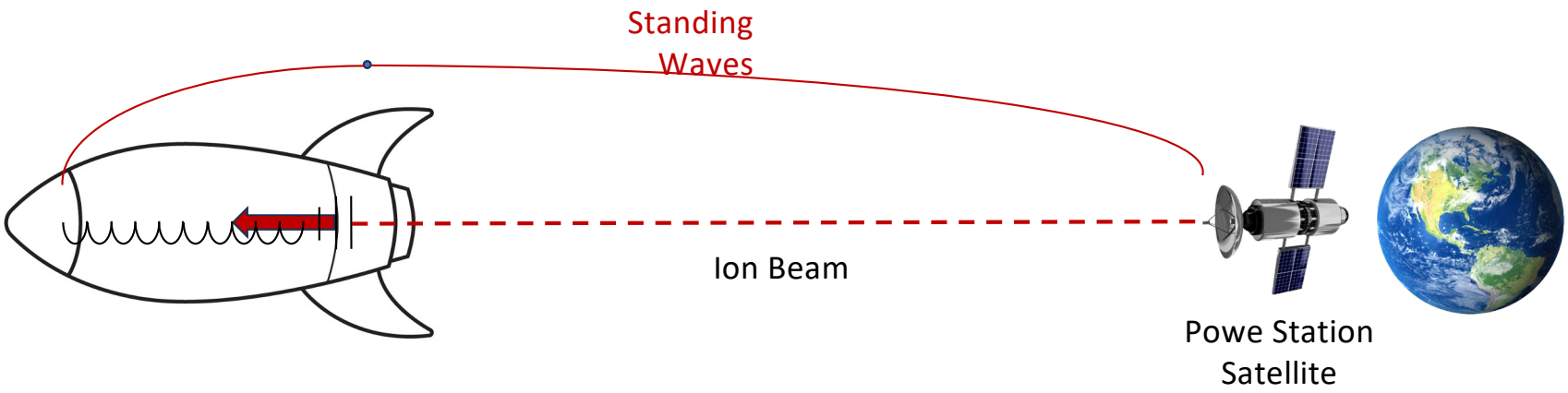
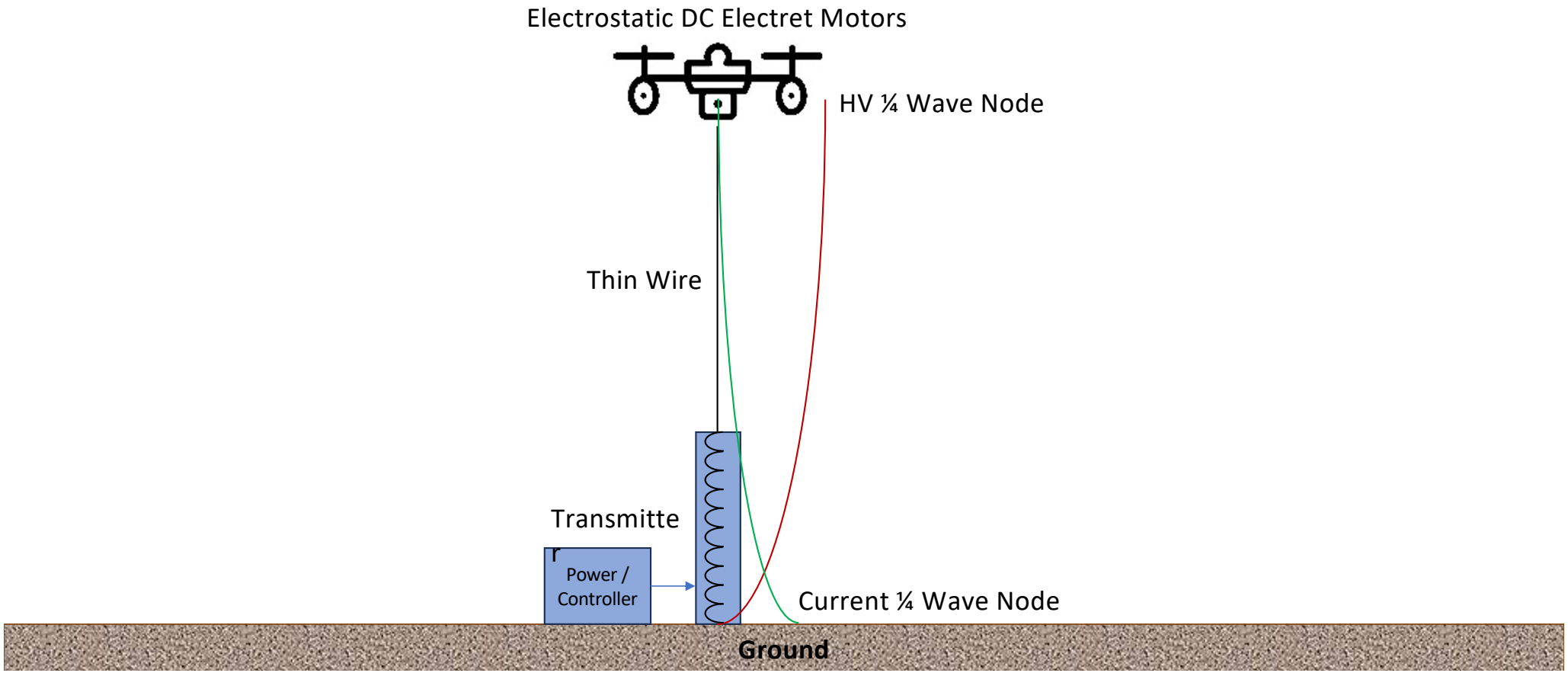


Application: Space Travel

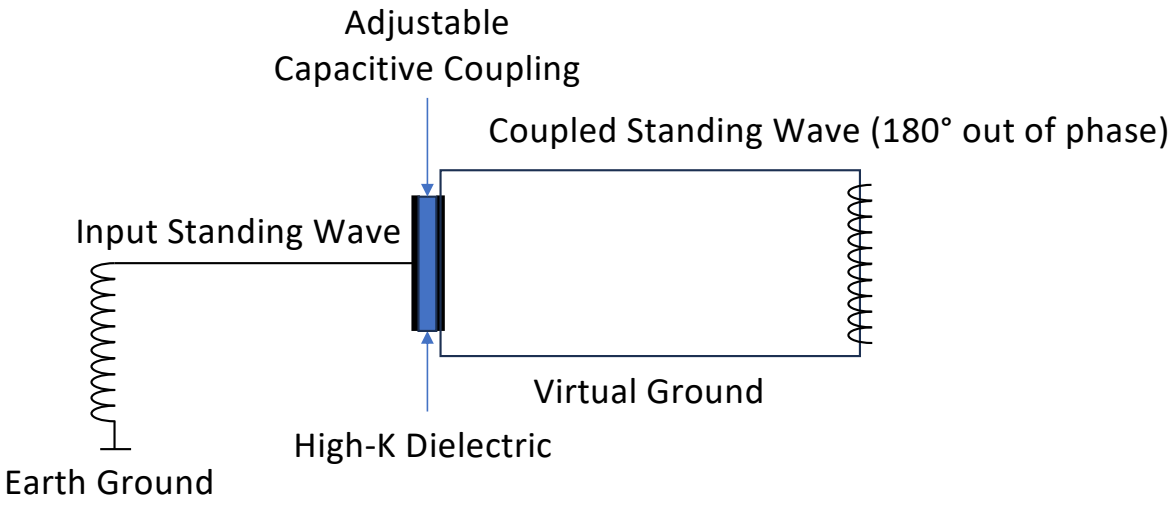
Conduction channel is afforded by the ion beam



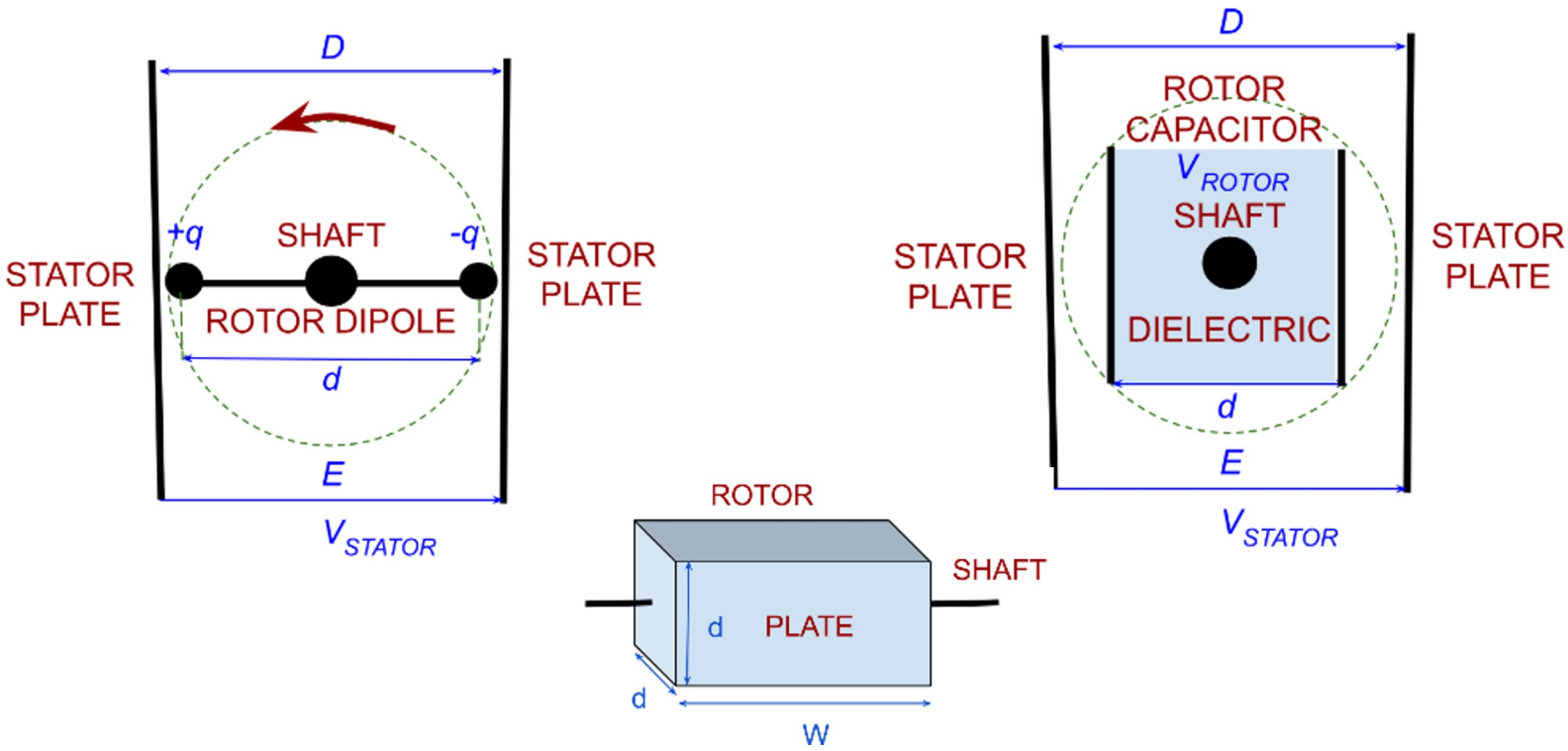
Application: Single-Wire Drone



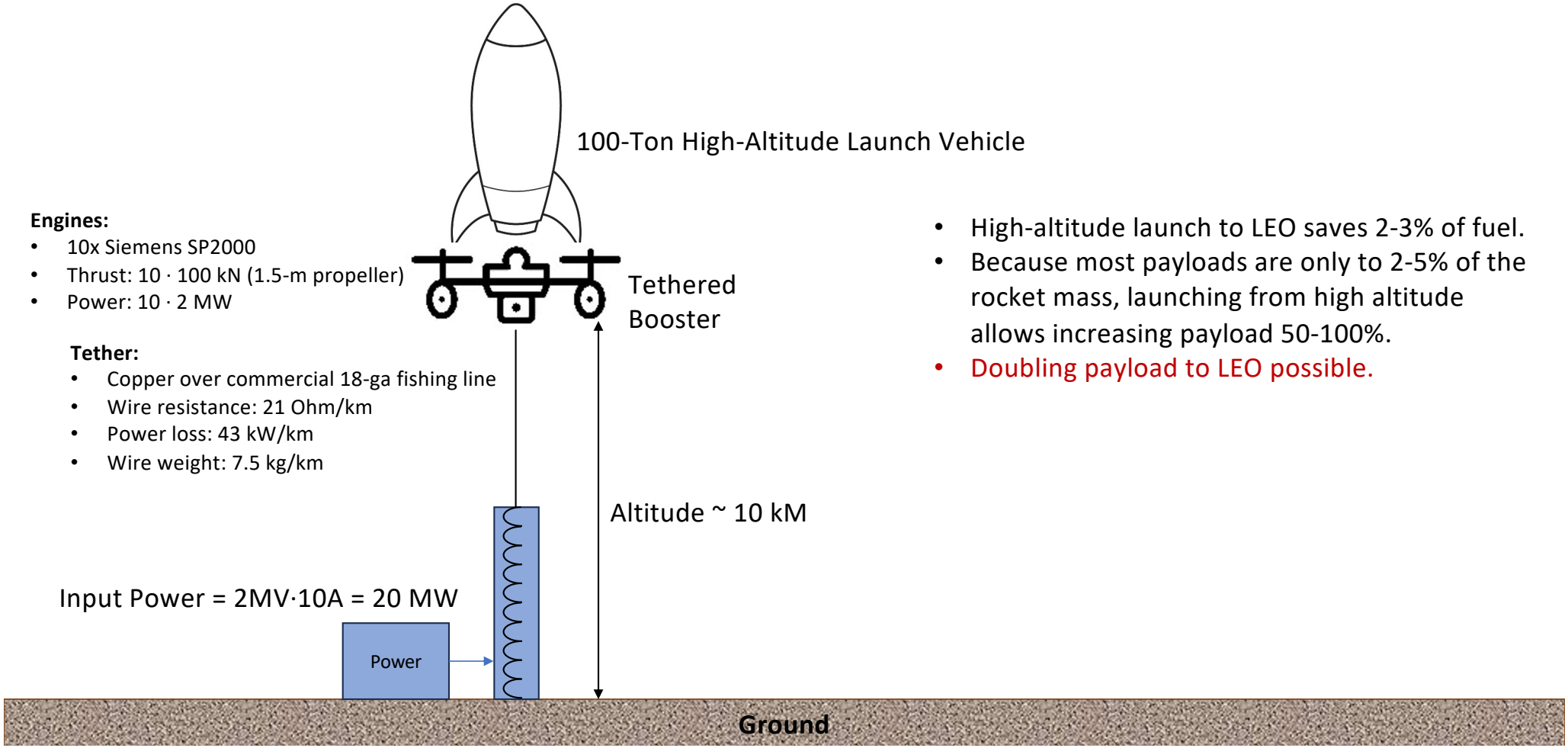
Capacitive Coupling for Power Take-Off



Electrostatic DC Electret Motor



Application: Single-Wire Space Launch System



Engines:
- 10x Siemens SP2000
- Thrust: 10 · 100 kN (1.5-m propeller)
- Power: 10 · 2 MW

Tether:
- Copper over commercial 18-ga fishing line
- Wire resistance: 21 Ohm/km
- Power loss: 43 kW/km
- Wire weight: 7.5 kg/km

- High-altitude launch to LEO saves 2-3% of fuel.
- Because most payloads are only to 2-5% of the rocket mass, launching from high altitude allows increasing payload 50-100%.
- Doubling payload to LEO possible.

Ask

$250,000 to prepare a demonstration as follows:

- Build a bigger oil charge generator
- Design larger-scale electret charging system
- Test a charge take-off system
- Demonstrate levitating platform

Expected time: 3 months

Location: Naples, Florida (USA)

About

Max Fomitchev-Zamilov, Ph.D.

- Inventor, engineer, scientist
- Former Assoc. Prof. CS&E, Penn State
- Founder of Maximus Energy Corporation
- Published papers in peer-reviewed journals, including Nature Scientific Reports
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