Executive Overview

Precision-Throttled Isotopic Methane Propulsion (PTIMP)

Repository: github.com/attosecondjerk/PTIMP-proposal

Overview:
The PTIMP-proposal repository presents a novel propulsion architecture leveraging isotopic methane fuels
(e.g., CH_4, CH_3D, CD_4) to enhance performance, thrust precision, and control. This concept targets fine-grained
propulsive control through molecular vibration tuning and neutron-responsive throttle systems.

Repository Components:
• README.md – Outlines PTIMP's core vision and approach.
• Sturgeon_PTIMP_Propulsion_Proposal_v4.docx – Formal proposal draft.
• PNG Figures – Visuals demonstrating vibrational energy modes, jerk vs delta-v analysis, fuel matrices,
  neutron shutter response, and isotopic thermodynamics.

Key Concepts:
• Isotopic fuels alter vibrational frequencies and thermal release characteristics.
• “Jerk” (the rate of change of acceleration) is tunable through fuel composition.
• Neutron shutters can trigger combustion or resonance response via radiation fields.

Potential Applications:
• AI-augmented control of precision thrusters in space systems.
• Modular fuel selection per mission phase (launch, cruise, descent, escape).
• Radiation-coupled engines, including hybrid chemical-nuclear systems.

Highlight Visuals:
• neutron-shutter-rcs.png – Neutron shutter response behavior.
• delta-v-jerk-worksheets.png – Fuel performance vs control profiles.
• table-of-methane-poly-isotopes.png – Isotopic molecular properties.

Summary:
The PTIMP concept fuses chemistry, quantum physics, control theory, and AI into a unified propulsion framework.
This repository represents an early-stage research vector with potential for deep-space mission optimization,
adaptive engines, and advanced control architectures.

Next Steps:
• Bench testing of vibrational spectra under isotopic variation.
• Validation of neutron shutter actuator models.
• Simulation of mission-phase fuel switching scenarios.

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