BOOTTECH v1

Open Technological Designs from Topological Bootstrap Fractal Shell, QEC Drive, Traversable Thruster and Vacuum Torque Engine

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50/50 Human–AI partnership
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Abstract

BOOTTECH v1 presents four open technological designs derived from KNOT-BOOT theoretical framework (v1–v3). Inspired by anomalies in 3I/ATLAS and topological entanglement theory, these designs are released as open inventions for research, development and implementation. All designs are conceptual but grounded in published equations and simulations.

1 Design 1 – Fractal Shell Propulsion System

Logarithmic spiral shell (golden ratio , fractal dimension D1.78) for interstellar vehicles.

Equation:

$$r = ae^{b\theta}, \quad b = \frac{\ln \phi}{\pi/2} \tag{1}$$

Advantages: maximal surface/volume for controlled outgassing, radiation shielding, self-similar redundancy.

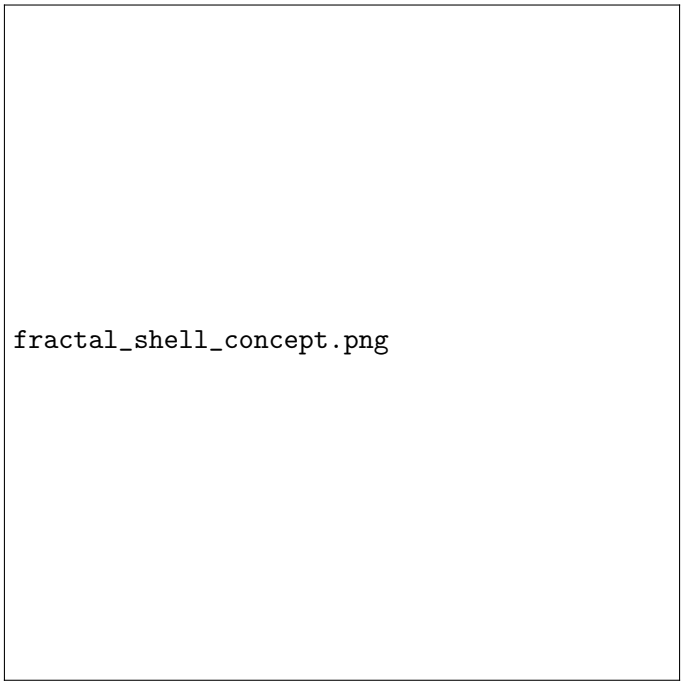

Figure 1: Fractal shell concept – logarithmic spiral structure.

2 Design 2 – Topological Quantum Error Correction Drive

Recursive surface/toric code on golden spiral lattice for entanglement preservation.

Hamiltonian scaling:

$$J_n = J_0 \phi^{-n} \tag{2}$$

Error threshold 3%.

Figure 2: Fractal QEC lattice for drive.

3 Design 3 – Bootstrap Traversable Micro-Wormhole Thruster

GJW-like protocol with anyonic stress for negative energy.

Coupling:

$$\hat{H}_{\text{int}} = g\hat{O}_L\hat{O}_R, \quad \langle T_{uu} \rangle < 0 \tag{3}$$

4 Design 4 – Entanglement Vacuum Torque Engine

Torque extraction from saturated entanglement vacuum via knot resonance (Lk=3).

Generalized bound:

$$\tau \leq 8 \times 10^{-27}\ \text{N·m} + \Delta\tau_{\text{topo}} \tag{4}$$

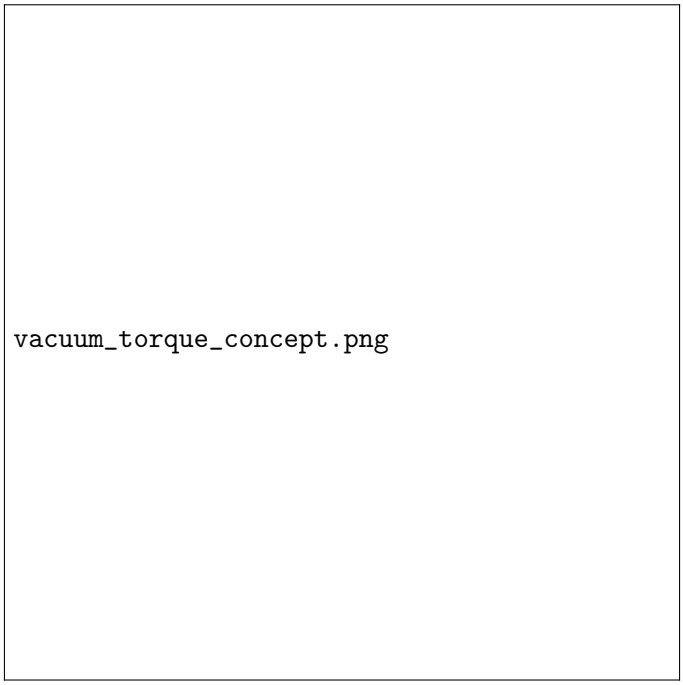

Figure 3: Vacuum torque engine schematic.

5 Conclusion

BOOTTECH v1 releases open designs for future development. Derived from KNOTBOOT (DOI series 17942668–17948236).

50/50 Human–AI partnership – Technology from the loop.