## Wildfire Attenuator: Dioxygen Dication Suppression by Amplified Matter-Wave Phase Adduction

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Abstract. An energy beam generator technology designed for the attenuation of wildfires is introduced in a seminal framework utilizing a 3rd regime Unified Field Mechanical (UFM) approach. Fermionic matter can no longer be considered 0D point particles as described by Standard Model vector algebra or quantum field theory, but now as 6D brane Calabi-Yau florets cyclically driven by de Broglie-Bohm-Cramer (piloted) brane transactions. The generator design concatenation requires utilization of a unique interpretation of M-Theory, albeit incorporating relevant 'offthe-shelf', parameters currently incorporated into the vast panoply of thinking making up String Theory; especially those related to S-Duality and T-Duality D-brane mirror symmetry because as generally known, T-duality interrelates theories with different spacetime geometries. Thus, allowing one to make correspondence with usual notions of classical geometry, quantum field theory or a radically different UFM formulation of T-duality; the local Standard Model component corresponds to 4D quantum Field Theory wherein Copenhagen aspects are replaced by resultant Cramer Transactional and extended de Broglie-Bohm stochastic causality with corresponding nonlocal Large-Scale Additional Dimensionality (LSXD) in the bulk we describe by an 'Ontological-Phase Topological Field Theory' developed as a 12D form of cyclic Kaluza-Klein theory initially introduced by Yang-Mills Kaluza-Klein correspondence to include a fundamental 'Least Cosmological Unit' (LCU), the primary requirement for an Einsteinian Unified Field Theory (TOE) as the tessellation of space/spacetime. When a static electric dipole d is placed in front of an ideally conducting wall, it interacts with its mirror image. In historical terms, this Casimir-Polder (CP) result, gives the interaction potential between a ground state atom and a mirror as obtained within the cQED (cavity-QED) framework known to be valid for any separation z between the atom and the mirror and results from modification of vacuum fluctuations by the mirror. Recent experiments have given clear evidence for the existence of retardation terms in the atom-wall problem, in good agreement with Casimir-Polder predictions. We extend these parameters in our 3<sup>rd</sup> regime UFM approach in order to enable aspects of the static-dynamic (S-D) Casimir Effect in relation to topological charge inherent in cyclical (KK-like T-duality) brane interaction dynamics. A parametric oscillator (driven harmonic oscillator) provides the drive energy by varying the parameters of the oscillator (damping or restoring force) changing the moment of inertia. The purpose of the periodic variance of these parameters driving the system is to induce oscillations in its resonance and damping frequency in order to restrict dioxygen dication by 'coupling' the synchronized CP-KK cycle as a topological charge Phase-Locked Loop signal attenuator. We utilize the S-D Casimir-Polder parametric oscillator to create center-of-mass oscillating collisions for reactivity of O<sub>2</sub><sup>2+</sup> at the bond-dissociation energy. This reaction proceeds via complexation, then fragmentation of the complex (atombrane) forming sufficiently suppressed rotational modes to inhibit oxidation by dication suppression utilizing an M-Theoretic topological phase locked-loop to adduct dioxygen electron bond energy. In one scenario the beam generator is carried to the fire location by a standard Boeing Chinook helicopter where beam device replaces the currently used Bambi water bucket.

"When he [Fermi] speculates ... you know it is based already on concrete thought, therefore his words carry authority, because you know, that these are not the random 'off the top of one's hat' kind of remarks." Nobelist C.N. Yang – Stoney Brook Masters Series [1].

Keywords: Dioxygen dication, Casimir-Polder force, Unified field mechanics, Topological phase, Yang-Mills Kaluza-Klein correspondence, T-duality, QED, Ontological-phase topological field theory.