

Abstract Submitted
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Noumen Mechanics: a Program EDOUARD ROCHER — Noumen Mechanics (NM): geometric synthesis between Relativistic Mechanics (RM) and Quantum Mechanics (QM) based on a more fundamental approach to RM. Events (1905) are geometric points in Minkowski space-time M^4 , noumens (1972) in C^4 , M^4 complex extension. A noumen is a chiral entity containing more information than an event, thus suggesting doing physics in C^4 instead of M^4 . Three main principles: *Representation duality*: $M^4 = C^{4*} \times C^4$ since $Sl(2;C)$ acts on C^4 and is the fundamental representation of the Lorentz group. *Homogeneous hypercomplex space*: C^4 and M^4 are quotient spaces of homogeneous spaces CC^4 and MM^4 . A geometric point is represented by a homogeneous class; the coefficients of homogeneity λ is its electroweak charge in CC^4 , and $\mu = |\lambda|^2$ its mass in MM^4 . *Analytic function of physical points*: Physical points are bounded sets of geometric points, noumens in C^4 , events in M^4 , with the resulting electroweak charge and mass. *Phase 1*: gain a deeper understanding of the mathematical sources of QM and RM. Two main NM results: bound electrons do not radiate; C^4/M^4 is the solution to physics hierarchy problem. *Phase 2*: apply new concepts to nuclear physics, following Pauli's interpretation (1936) of Fermi's weak-interaction constant (1934).

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