Numerical **Solution of Time-Dependent Gravitational Schrödinger Equation** VIC CHRISTIANTO, DIEGO L. RAPOPORT, Universidad Nacional de Quilmes, Argentina, FLORENTIN SMARANDACHE, University of New Mexico, Gallup Campus — In recent years, there are attempts to describe quantization of planetary distance based on time-independent gravitational Schrödinger equation, including Rubcic & Rubcic's method and also Nottale's Scale Relativity method. Nonetheless, there is no solution yet for time-dependent gravitational Schrödinger equation (TDGSE). In the present paper, a numerical solution of time-dependent gravitational Schrödinger equation is presented, apparently for the first time. This numerical solution leads to gravitational Bohr-radius, as expected. In the subsequent section, we also discuss plausible extension of this gravitational Schrödinger equation to include the effect of phion condensate via Gross-Pitaevskii equation, as described recently by Moffat. Alternatively one can consider this condensate from the viewpoint of BogoliubovdeGennes theory, which can be approximated with coupled time-independent gravitational Schrödinger equation. Further observation is of course recommended in order to refute or verify this proposition.

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