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Journal Name:	**Physical Science International Journal**
Manuscript Number:	**Ms_PSIJ_34889**
Title of the Manuscript:	**METASTABLE NON-NUCLEONIC STATES OF NUCLEAR MATTER: PHENOMENOLOGY**
Type of the Article	**Original Research Paper.**

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Compulsory REVISION comments	Article Reference: **Ms_PSIJ_34889** Title: **METASTABLE NON-NUCLEONIC STATES OF NUCLEAR MATTER: PHENOMENOLOGY** In this paper the authors have shown that the metastable states of the nuclear matter may exist when the nuclear forces are not strong enough to bind a part of the quarks into stable nucleons, which leads to local shake-ups in the nucleonic structure of the nucleus. For these anomalous excited states of the nuclear matter, called inner-shake-up or *isu*-states, the relaxation of the nuclei is initiated by the weak nuclear interaction. The existence of nuclei with a shaken-up nucleonic structure makes it possible to physically interpret a rather large group of experimental data on the initiation of low energy nuclear reactions (LENRs) and the acceleration of radioactive α- and β-decays in a low-temperature plasma. The possible mechanisms of LENRs implemented in a Rossi E-CAT reactor are discussed. It is also suggested that the metastable *isu*-states of a different type occur as a result of high-energy collisions of particles, when heavy hadrons (baryons, mesons) are formed in the collisions of protons with characteristic energies higher than 1 TeV. This kind of concept makes it possible to physically interpret the recently recorded anomaly in the angular $+ - 19$ *e e* correlations of positron-electron pairs emitted in the radioactive decays of excited 820 *Be* nuclei formed by the interaction between protons with kinetic energy ~ 1 MeV and 721 *Li* nuclei. It is this anomaly that can become the basis for introducing a fifth fundamental interaction into physics, in addition to the	

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	strong/weak nuclear, electromagnetic, and gravitational interactions. The article is very interesting and is very well written, the references are appropriate.	
Minor REVISION comments	In my opinion, the article can be published after some minor changes in the references section. The references should be as follows: [1], [2],	
Optional/General comments		

Reviewer Details:

Name:	***Alejandro Gutiérrez-Rodríguez***
Department, University & Country	***Universidad Autónoma de Zacatecas, Mexico***