

## EJTP, Issue 30: Happy Physics for a New Year!

The issue 30 marks EJTP tenth anniversary and offers a battery of articles of the highest level in its best tradition: speculative taste, mathematically rigorous and few concessions to fashions.

The interest in alternative theories of gravity is increasing, Hagen Kleinert, with his usual magic math, finds the spirit of the immortal paper by A. Sakharov (Dokl. Akad. Nauk SSSR 177, 70; Vacuum quantum fluctuations incurved space and the theory of gravitation, (1967), reprinted in (2000) Gen. Rel.Grav. 32, 365), offering a powerful reinterpretation of conformal gravity. We are pleased to see in his Acknowledgments the name of G. Chapline, whom one of the authors of these notes (IL) is bound to for borrowing him the expression and the image of a big bang as vacuum nucleation, back in 1980. An idea that would later find a realization in Archaic Quantum Cosmology developed since 2009 with L. Chiatti. We hope to have him soon as our author.

A work of extraordinary computational and theoretical interest is that by S. Succi S. Palpacelli, M. Mendoza and H.J. Herrmann, which establishes a bridge between Boltzmann and Dirac by Majorana, showing the potential of the Quantum Lattice Boltzmann in quantum information and QFT.

C. Corda refines his analysis of the semi-classical radiation of the black hole; E. M. Beniamov offers an elegant approach to stochastic QM redefining the observables in a non-commutative phase space and thus circumventing some ingenuities of older versions; , M. Abdelouahab and N. Hamri explore a model of Fractional-order hybrid optical system and its controlled chaos synchronization, a theoretical area of growing impact in technology.

Theoretical research on the fundamental entity of the quantum vacuum is always active and crucially important. Tadas K Nakamura addresses the Rotating Unruh-DeWitt Detector in Minkowski Vacuum and discusses the response and excitation of accelerating detectors by negative Killing energy. R. Kastner introduces a distinction between real and virtual photons using the scenario of Davies-Wheeler-Feynman theory in the context of the new transactional theory that promises a full reconciliation between QM and QFT. For those wishing to learn more we recommend his beautiful book: *The Transactional Interpretation of Quantum Mechanics* (Cambridge, 2013). Johan Hansson offers us a critical reflection on the problems relating to the spectrum of elementary particles in the standard model.

We dedicate always a space to the many families of cosmological theories fertilized by new observational data ((Sloan Digital Sky Survey , WMAP and Chandra Xray observatory) and by the debate on Dark Matter : S. Chandel, M.K. Singh and Shri Ram investigate the Bianchi Type-VI0 Isotropic Cosmological Models with Dark Energy. Finally H. Amirhashchi, D. S. Chouhan and A. Pradhan analyze the evolution of the equation of state (EoS) parameter for dark energy in (FRW) model filled with barotropic fluid and dark energy.

A special thank to Julian Voss-Andreae, artist and physicist, who let us use his fascinating work *Spin Family (Bosons and Fermions)*, steel and silk, 7" x 6" x 6", 2009 (<http://julianvossandreae.com/>) as a cover .

So we celebrate with such a good theoretical physics in the beginning of the New Year and the first decade of EJTP with all the members of the Editorial Board, ready for the challenges to come.

Ammar Sakaji & Ignazio Licata.