

- **PUBLICATIONS**

- [1] C. Crucean and M.A. Baloi, *Interaction between Maxwell field and charged scalar field in de Sitter universe*, Int. J. Mod. Phys. A **30**, (2015).
- [2] C. Crucean and M.A. Baloi, *Fermion production in a magnetic field in a de Sitter universe*, Phys. Rev. D **93**, (2016).
- [3] C. Crucean and M.A. Baloi, *Perturbative approach to the problem of particle production in electric field on de Sitter universe*, Mod. Phys. Lett. A **31**, (2016).
- [4] Ion I. Cotaescu, Cosmin Crucean, Ciprian A. Sporea, *Partial wave analysis of the Dirac fermions scattered from Schwarzschild black holes*, Eur. Phys. J.C **76:102**, (2016).
- [5] Ion I. Cotaescu, Cosmin Crucean, Ciprian A. Sporea, *Partial wave analysis of the Dirac fermions scattered from Reissner-Nordstrom charged black holes*, accepted in Eur. Phys. J.C **76**, (2016).
- [6] I. I. Cotaescu and C. Crucean, *de Sitter QED in Coulomb gauge: First order transition amplitudes*, Phys. Rev. D **87**, (2013).
- [7] C. Crucean, *Fermion production in Coulomb field on de Sitter universe*, Phys. Rev. D **85**, (2012).
- [8] I. I. Cotaescu and C. Crucean, *The quantum theory of the free Maxwell field on the de Sitterexpanding universe*, Prog. Theor. Phys. **124**, (2010).
- [9] C. Crucean, *Amplitude of Coulomb scattering for charged scalar field in de Sitter spacetime*, Mod. Phys. Lett. A **25**, (2010).
- [10] C. Crucean, R. Racoceanu and A. Pop - *Coulomb scattering for scalar field in Schrodingerpicture*, Phys. Lett. B **665**, pp. 409 (2008).
- [11] I. I. Cotaescu and C. Crucean, *New Dirac quantum modes in moving frames of the de Sitterspacetime*, Int. J. Mod. Phys. A **23**, (2008).
- [12] I. I. Cotaescu, C. Crucean, A. Pop, *The quantum theory of scalar fields on the de Sitter expandinguniverse*, Int. J. Mod. Phys. A **23**, (2008).
- [13] I. I. Cotaescu and C. Crucean, *Dirac-Coulomb scattering with plane wave energy eigenspinors onde Sitter expanding universe*, Int. J. Mod. Phys. A **23**, pp.1351 (2008).
- [14] C. Crucean and R. Racoceanu, *Reduction formalism for Dirac fermions on de Sitter space-time*, Int. J. Mod. Phys. A **23**, pp.1075 (2008).

[15] C. Crucean, *Coulomb scattering of the Dirac field on de Sitter expanding universe*, Mod. Phys. Lett. A **22**, pp.2573 (2007).

[16] I. I. Cotaescu , R. Racoceanu, C. Crucean, *Remarks on the spherical waves of the Dirac field on de Sitter spacetime*, Mod.Phys.Lett A **21** (2006).

- **PREPRINTURI:**

[1] C. Crucean, *Fermion production by a dependent of time electric field in de Sitter universe*, ArXiv:1302.1290v2[qr-qc] (2013).

[2] C. Crucean, *An integral containing the product of four Bessel functions*, ArXiv:0912.3659v1 [math-ph] (2009).

CONFERENCES:

1.Ion I. Cotaescu, C. Crucean, *First order transition amplitudes*, The physics conference TIM-10, 2010, Timisoara, Romania.

2.Ion I. Cotaescu, C. Crucean, *De Sitter QED*, The physics conference TIM-14, 2014, Timisoara, Romania.

3.Ion I. Cotaescu, C. Crucean, C. A. Sporea, “*Elastic scattering of Dirac fermions on Schwarzschild black holes*”, talk presented at „The Joint Meeting on Quantum Field Theory and Nonlinear Dynamics”, 2014, Sinaia, Romania.

4.I.I. Cotaescu, C. Crucean and C.A. Sporea, "The scattering of Dirac fermions on Schwarzschild black holes - a partial wave analysis approach", *The Planck Scale II: XXXV Max Born Symposium*, 7 - 12 Sept. 2015, Wroclaw (Poland).

5. I.I. Cotaescu, C. Crucean and C.A. Sporea, "Scattering of massive fermions on Schwarzschild black holes", *20th International Summer School on Global Analysis and its Applications - General Relativity: 100 years after Hilbert*, 16-22 August, 2015, Stara Lesna, (Slovakia).

6. C.Crucean and M. A. Baloi, *Fermion production in magnetic fields on de Sitter Universe*, 7th-12nd September 2015, The Planck Scale II- 35 Born Symposium, Wroclaw, Poland, oral presentation.

Invited lectures:

1. C. Crucean - *Theory of interacting fields in de Sitter geometry*, 2010, talk at the University of Nis, Serbia at the invitation of the Southeastern European Network in Mathematical and Theoretical Physics.

2. Ion I. Cotaescu, C. Crucean, *De Sitter QED*, invited talk at The physics conference TIM-13, 2013, Timisoara, Romania.