

General Relativity and Quantum Cosmology

Expanding Universe and its manifestations beyond the General Relativity

L.M. Tomilchik, N.G. Kembrovskaya

(Submitted on 20 Jan 2010)

It has been demonstrated that a modern stage of the Universe expansion may be described in accordance with the observations within the scope of the space-time conformal geometry. The clock synchronization procedure in SR has been generalized to the case of the expanding space. It has been found that a universal local manifestation of the cosmological expansion is a background acceleration, the value of which is determined by Hubble constant. The formulae defining an explicit red-shift dependence of the cosmological distance and expressions for Hubble law have been obtained in a pure kinematic way from the conformal group transformation, providing a quantitative representation of the Pioneer anomaly and of the effect associated with the experimentally revealed Metagalaxy transition to its accelerated expansion

Comments: 31 pages, 4 figures

Subjects: **General Relativity and Quantum Cosmology (gr-qc)**Cite as: [arXiv:1001.3536v1](https://arxiv.org/abs/1001.3536v1) [gr-qc]

Submission history

From: Tomilchik Lev [[view email](#)]

[v1] Wed, 20 Jan 2010 10:25:01 GMT (118kb)

*[Which authors of this paper are endorsers?](#)*Link back to: [arXiv](#), [form interface](#), [contact](#).

Download:

- [PostScript](#)
- [PDF](#)
- [Other formats](#)

Current browse context:

gr-qc

[< prev](#) | [next >](#)[new](#) | [recent](#) | [1001](#)

References & Citations

- [SLAC-SPIRES HEP](#)
([refers to](#) | [cited by](#))
- [CiteBase](#)

Bookmark([what is this?](#))

 [CiteULike logo](#) [Connotea logo](#) [BibSonomy logo](#) [Mendeley logo](#) [Facebook logo](#) [del.icio.us logo](#) [Digg logo](#) [Reddit logo](#)