Energy Extraction and Particle Acceleration Around Rotating Black Hole in Horava-Lifshitz Gravity

Ahmadjon Abdujabbarov, Bobomurat Ahmedov, Bahodir Ahmedov

(Submitted on 27 Jul 2011)

Penrose process on rotational energy extraction of the black hole (BH) in the original non-projectable Ho\v{r}ava-Lifshitz gravity is studied. The strong dependence of the extracted energy from the special range of parameters of the Ho\v{r}ava-Lifshitz gravity, such as parameter Λ_W and specific angular momentum a has been found. Particle acceleration near the rotating BH in Ho\v{r}ava-Lifshitz gravity has been studied. It is shown that the fundamental parameter of the Ho\v{r}ava-Lifshitz gravity can impose limitation on the the energy of the accelerating particles preventing them from the infinite value.

Comments:	6 pages, 3 figures, accepted for publication in Physical Review D
Subjects:	**Solar and Stellar Astrophysics (astro-ph.SR)**; General Relativity and Quantum Cosmology (gr-qc)
Journal reference:	Physical Review D, 84, 4, 044044 (2011)
DOI:	10.1103/PhysRevD.84.044044
Cite as:	**arXiv:1107.5389 [astro-ph.SR]**
	(or **arXiv:1107.5389v1 [astro-ph.SR]** for this version)

Submission history

From: Ahmadjon Abdujabbarov [view email]
[v1] Wed, 27 Jul 2011 05:42:50 GMT (291kb)

Which authors of this paper are endorsers?