

arXiv.org > hep-ph > arXiv:1107.0403

High Energy Physics - Phenomenology

Gravitino dark matter and baryon asymmetry from Q-ball decay in gauge mediation

Shinta Kasuya, Masahiro Kawasaki

(Submitted on 2 Jul 2011 (v1), last revised 8 Jul 2011 (this version, v3))

We investigate the Q-ball decay in the gauge-mediated SUSY breaking. Q balls decay mainly into nucleons, and partially into gravitinos, while they are kinematically forbidden to decay into sparticles which would be cosmologically harmful. This is achieved by the Q-ball charge small enough to be unstable for the decay, and large enough to be protected kinematically from unwanted decay channel. We can then have right amounts of the baryon asymmetry and the dark matter of the universe, evading any astrophysical and cosmological observational constraints such as the big bang nucleosynthesis, which has not been treated properly in the literatures.

Comments: 7 pages, 6 eps figures, footnote added Subjects: High Energy Physics - Phenomenology (hep-ph); Cosmology and Extragalactic Astrophysics (astro-ph.CO) Cite as: arXiv:1107.0403 [hep-ph] (or arXiv:1107.0403v3 [hep-ph] for this version)

Submission history

From: Shinta Kasuya [view email] [v1] Sat, 2 Jul 2011 19:02:04 GMT (37kb) [v2] Wed, 6 Jul 2011 02:31:38 GMT (37kb) [v3] Fri, 8 Jul 2011 13:52:45 GMT (40kb)

Which authors of this paper are endorsers?

Link back to: arXiv, form interface, contact.

Search or Article-id	or Article-id
----------------------	---------------



(Help | Advanced search)

Download:

- PDF
- PostScript
- Other formats

Current browse context: hep-ph

< prev | next >

new | recent | 1107

Change to browse by:

astro-ph astro-ph.CO

References & Citations

- INSPIRE HEP (refers to | cited by)
- NASA ADS

Bookmark(what is this?)