УДК 52:53(063)
ББК 26.21+22.63+22.68+22.313
I-33

I-33 **ICGAC-12** : тезисы XII Международной конференции по гравитации, астрофизике и космологии, посвященной столетию общей теории относительности Эйнштейна. Россия, Москва, РУДН, 28 июня – 5 июля 2015 г. – Москва : РУДН, 2015. – 141 с. : ил.

ISBN 978-5-209-06616-3

Section 8 — Relativistic Astrophysics

Cosmological evolution of semi-degenerate Fermi-system of scalar charged particles

Alexander Agathonov[1]

Kazan Federal University, Russian Federation[1]

[1] e-mail: a.a.agathonov@gmail.com

We constructed complete self-consistent mathematical model of cosmological semi-degenerate two-component scalar charged plasma with phantom scalar interparticle interaction in the case of equality of particles and antiparticles effective masses. In our model interaction between plasma and scalar field is carried out by means of fundamental scalar charges, which are individual for each type of particle, and it is assumed that scalar charges of particles and antiparticles have opposite signs. Based on the mathematical model we defined computer model of semi-degenerate cosmological plasma with phantom scalar interparticle interaction. We revealed properties of the model and showed that degree of degeneration of one plasma component increases. In terms of thermodynamics this component becomes colder.

[1] Yu. Ignat'ev, R. Miftakhov. // Gravitation and Cosmology, 2006, **12**, No 2-3, pp. 179-184;

[2] Yu. G. Ignatyev, R.F. Miftakhov. // Gravitation and Cosmology, 2011, **17**, No. 2, pp. 190-193;

[3] Yu. G. Ignat'ev. // Russian Physics Journal, **55**, No. 2 (2012), pp. 166-172;

[4] Yu. G. Ignatiev. // Russian Physics Journal, **55**, No. 5 (2012), pp. 550-560;

[5] Yu. G. Ignatyev. // Russian Physics Journal, **55**, No. 11 (2013), pp. 1345-1350;

[6] Yu.G. Ignat'ev, A.A. Agathonov and D.Yu. Ignatyev. // Gravitation and Cosmology, 2014, **20**, No. 4, pp. 304-308;

[7] Yurii Ignat'ev, Alexander Agathonov, Mikhail Mikhailov and Dmitry Ignatyev. // Astrophysics and Space Science, 2015, to be published; arXiv: 1411.6244;

[8] Yu.G. Ignat'ev, A.A. Agathonov. // Gravitation and Cosmology, 2015, **21**, No. 2, pp. 105-112.