Absence of electrical quasi-neutrality breaks the universe symmetry during the phase explosion

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The forming of the electromagnetic flux in the singularity [1] in the absence of the charged particles does not result in the flying – apart of the matter because of the its reflection due to the gravitation effects. The real flying – apart appears only as a result of the phase explosion – the simultaneous appearance of the radial electric field  and the Schwinger production of the charged particles outside the singularity by the account of the Poisson equation [2]. In this case it is suggested that near the singularity is possible the separation of the charged particles of opposite charge to be arised simultaneous with the electric field  , , where > 0,  < 0.

Then after differentiation with respect to time one can obtain

, where in the right-hand side of the equation represents the value which is proportional to the total number of particles pair come in into being in Schwinger process per unit volume and per unit time w [cm–3, s–1]. .

 Therefore, according to [2], this expression one can rewrite in the form

,

,,,

where takes place , , , .

In the singularity  and outside the singularity because of instantaneous change of the electric field . Owing to antimatter concentration near the singularity electric field takes the form  < 0. Therefore the equation for the electric field takes the form

 . .

 Introducing designations ,  one can obtain the final equation

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References

1. Hawking S.W., Penrose R. // Proc. Roy. Soc. Lond. A. 314, 529–548 (1970). Printed in Great Britain.
2. Ritus V.I., Nikishov A.I. // The Quantum Electrodynamics of Phenomena in Intense Field. Proc. Lebedev Physical Inst., v. 111. Moscow, Nauka, 1979.