Bull. Spec. Astrophys. Obs., 1994, 37, 80.

MASS TERM IN RELATIVISTIC GRAVITATION THEORY AND ASYMPTOTICS OF GRAVITATIONAL FIELD

S.N. SOKOLOV
Institute of High Energy Physics, Protvino
Moscow Region, 142284, Russia

ABSTRACT. *The influence of the mass term added to the RTG Lagrangian on the asymptotical behaviour of the solutions at large distances is studied at the example of the spherically-symmetric case. For one sign of the mass term it is shown that the solutions for the metric element $g_{\tau\tau}$ and for the difference of the radii in the Minkowsky and Riemann spaces are oscillating with the finite amplitude at infinity and are not fixed uniquely with the usual boundary conditions. For the other sign of the mass term the general solution contains both the dropping and the rising exponentials and the regularity conditions that exclude the rising component fix uniquely the solution. This solution is found at τ in the weak-field approximation.*