

ON THE PROBLEM OF THE ORIGIN OF INERTIA*

by

F. KÁROLYHÁZI

Institute of Theoretical Physics, Eötvös Loránd University, Budapest.

SUMMARY

The problem of the origin of inertia is investigated in connection with Mach's principle. After a short review of the problem it is argued that Mach's principle in a sense near to the original ideas of Mach, is not incorporated in the general theory of relativity. On the other hand one can formulate a selection principle which enables us to divide the solutions of the gravitational equations into two classes. The members of the first class do, the members of the second class do not contradict to the appropriate inheritance of Mach's original requirements. Thus these latter solutions may perhaps remain permissible even in the future when at a stage of deeper knowledge the others turn out to be a not permissible extrapolation beyond the domain of validity of Einstein's equations. It has been given a precise formulation of the selection principle, which seems to be more general and flexible than the previous ones.

* To be published in the Acta Phys. Hung.