

**ON THE ASYMPTOTIC METHOD OF SOLUTION OF ONE
CLASS OF ASTROPHYSIC PROBLEMS**

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Abstract

This work proposes an asymptotic method of solution for a system of nonlinear nonhomogeneous equations of one class of mixed problems with an unknown external boundary in the domain. The problem of a central explosion of a nonhomogeneous gas sphere (star) that is balanced in its own gravitating field is discussed as the first test problem. The problem of a central explosion of homogeneous gas sphere collapsing at zero pressure and followed by a thermonuclear detonation is discussed here.

Key words and phrases: Asymptotic method, Detonating wave, Explosion, Collapse.

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