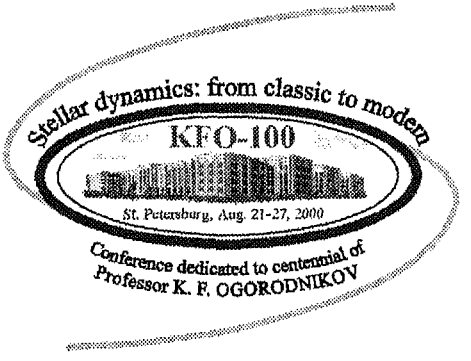
SAINT PETERSBURG STATE UNIVERSITY
Sobolev Astronomical Institute

STELLAR DYNAMICS: FROM CLASSIC TO MODERN

International Conference to be held
in Saint Petersburg, August 21–27, 2000

Abstracts
Participants



Saint Petersburg
2000

Edited by L. P. Ossipkov, I. I. Nikiforov

The issue contains the abstracts and list of participants of the International Conference "Stellar Dynamics: from Classic to Modern" to be held in Saint Petersburg, August 21–27, 2000 in honour of the 100th birthday of Professor Kyrill Fedorovich Ogorodnikov (1900–1985). The work of editors was mainly technical. Only the authors of abstracts are responsible for scientific contents of their texts.

Publication is supported by the Russian Foundation for Basic Research (grant number 00-02-26102)

ISBN 5-7997-0221-2

ЛР № 040815 от 22.05.97.

Подписано к печати 19.07.2000 г. Формат бумаги 60X90 1/16. Бумага офсетная. Печать ризографическая. Объем 4,5 п.л. Тираж 200 экз. Заказ 1475.
Отпечатано в отделе оперативной полиграфии НИИХ СПбГУ
с оригинал-макета заказчика.
198904, Санкт-Петербург, Старый Петергоф, Университетский пр. 2.

where A_i are the coefficients of a globule's potential; Ω is the circular velocity around the Galaxy, κ is the epicyclic frequency. It has been worked out the equation

$$\pi G\rho\left(A_2 - \frac{a^2}{b^2}A_1\right) = \frac{1}{R}\frac{d\Phi}{dR} + \frac{2(\Phi_0 - \Phi)}{R^2},$$

from which it follows, that as a function of globule position the latter can have the form both the prolated (from the center of the Galaxy) or the oblate spheroid. On some critical distance these two kinds of the forms are divided by a sphere.

On the Problem of Angular Momentum Distribution in Axially Symmetric Galaxies

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1. The constructing axially symmetric models for gravitating equilibrium galaxies is frequently carried out through the distribution of the angular momentum $L[M(R)]$ as a function from mass inside a cylindrical surface with a value of L given on it. Such approach is physically more evident, than an *a priori* choice of a distribution law for an angular velocity. As the function $L(R)$ is an invariant at the abscence of turbulence and viscosity, then the study of observational distribution of the angular momentum in galaxies can clarify their origin.

2. In this paper the problem of internal distribution of the angular momentum in classical homogeneous Maclaurin's spheroids is considered. An exact expression of such distribution was found to be the following:

$$L(R) = L_t\left\{1 - \frac{5}{2}\left(1 - \frac{M(R)}{M_t}\right) + \frac{3}{2}\left(1 - \frac{M(R)}{M_t}\right)^{5/3}\right\}.$$

Disappointing error in cosidering this problem in some reviews and monographs is revealed. Then the correct expression for the angular momentum is used for determining angular velocity distribution in galaxies with real density distribution.