Petrozavodsk State University St.-Petersburg State University

# STRUCTURE AND EVOLUTION OF STELLAR SYSTEMS

(Abstracts of the Conference)

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# THE FIGURES OF EQUILIBRIUM OF STELLAR SYSTEMS. SOME NEW PHASE FUNCTIONS FOR SPHEROIDS WITH QUADRATIC POTENTIAL

#### B.P. Kondratyev

Using original method we find new nonellipsoidal phase distribution functions for collisionless stellar spheroids with quadratic potential. These solutions are obtained without of the artificial condition of obligatory contact with spheroid's surface by all star's orbits. In velocity space the models occupy a volume with a fourth degree bounding surface. The models have one or two parameters which govern number of stars with positive or negative direction of azimuth motion. The one-parameter model has a nonlinear baroclinic rotation and surfaces of constant angular velocity reveal a similarity with ones in Galaxy. The two-parameter models have a rigid rotation. Components of the dispersion velocity tensor and the tensor of the third rank are derived.

## Bars as bar-modes

#### V. Polyachenko

# Dynamics of the interstellar gas in the vicinity of the bar V. Levy, E. Mikhailova, V. Mustsevoy

# TRIPLETS: POTENTIAL, DENSITY, AUGMENTED DENSITY FOR SOME MODELS OF GALAXIES

## L.P. Ossipkov

The method of equipotentials is used for modelling mass distribution in stellar systems. We consider axisymmetric models with general quartic equipotentials. The equipotentials of models by Kuzmin, Miyamoto & Nagai, Satoh and Lynden-Bell - Bagin will be special cases of ones. As for the potential law we consider Kuzmin - Malasidze -