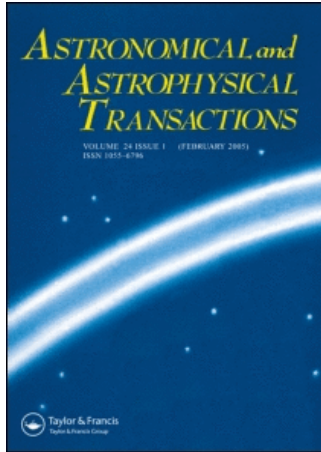


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Astronomical & Astrophysical Transactions

The Journal of the Eurasian Astronomical Society

Publication details, including instructions for authors and subscription information:
<http://www.informaworld.com/smpp/title~content=t713453505>

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Online Publication Date: 01 May 1995

To cite this Article: Nuritdinov, S. N. (1995) 'The warp instability of a non-linear rotating model of disk self-gravitating systems', *Astronomical & Astrophysical*

Transactions, 7:4, 305

To link to this article: DOI: 10.1080/10556799508203284

URL: <http://dx.doi.org/10.1080/10556799508203284>

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THE WARP INSTABILITY OF A NON-LINEAR ROTATING MODEL OF DISK SELF-GRAVITATING SYSTEMS[†]

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(Received December 25, 1993)

A model of a non-linear pulsating disc was constructed. The distribution function is given by

$$\Psi = \frac{\sigma_0}{2\pi(1 - \Omega^2)^{1/2}R} \left[\frac{1 - \Omega^2}{\Pi^4} (R^2 - r^2) - (v_r - v_a)^2 - \left(v_\perp - \frac{\Omega r}{\Pi^2} \right)^2 \right]^{-1/2} \cdot \chi(R - r).$$

Notation is the same as in another Nuritdinov's contribution in this issue. The warp oscillations of the model were studied. A non-stationary dispersion equation was obtained. The dependence of the critical virial ratio $(2T/|u|)_0$ on the rotation parameter was found for cupola and asymmetric warp oscillations.

KEY WORDS Stellar dynamics: non-linear oscillations, stability

[†]Proceedings of the Conference held in Kosalma