NUMERICAL EXPERIMENTS ON THE STABILITY OF SPHERICAL STELLAR SYSTEMS

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The concentric shell model is used to investigate numerically the stability of spherical steady-state stellar systems. Polytropic models with an isotropic velocity distribution are found to be stable almost down to the limiting index $n=\frac{1}{2}$. 'Generalized polytropes', with a distribution function depending on energy and angular momentum, show instability when n is low and the velocity distribution is radially elongated.

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DISCUSSION

P. Bouvier: When you speak of a stable system, do you mean stable with respect to any kind of perturbations?

M. Hénon: No. The stability considered here is concerned only with perturbations preserving spherical symmetry.

Y. Kozai (ed.), The Stability of the Solar System and of Small Stellar Systems, 259.