

R14a The Disruption of Globular Star Clusters in the Galaxy

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Recent N -body simulations have shown that there is a serious discrepancy between the results of the N -body simulations and the results of Fokker-Planck simulations for the evolution of globular and rich open clusters under the influence of the galactic tidal field. In some cases, the lifetime obtained by Fokker-Planck calculations is more than an order of magnitude smaller than those by N -body simulations. In this study we show that the principal cause for this discrepancy is an over-simplified treatment of the tidal field used in previous Fokker-Planck simulations. We performed new Fokker-Planck calculations using a more appropriate implementation of the boundary condition of the tidal field. The implementation is only possible with *anisotropic* Fokker-Planck models, while all previous Fokker-Planck calculations rely on the assumption of isotropy. Our new Fokker-Planck results agree well with N -body results. Comparison of the two types of simulations gives a better understanding of the cluster evolution.