

SEMI-PARAMETRIC MASS ESTIMATES FOR THE MILKY WAY AND ANDROMEDA HALOS

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Abstract

In this paper, we try to improve upon the mass estimates that Wilkinson and Evans undertook in their study of the Milky Way and the Andromeda halos by using semi-parametric methods of statistical analysis, which inherently use fewer assumptions about the data than does Bayesian analysis. Wilkinson and Evans had mass estimates of the Milky Way and Andromeda halos that were respectively $1.9(-1.7+3.6) \times 10^{12} M_{\odot}$ and $12.3(-6+18) \times 10^{11} M_{\odot}$, where M_{\odot} denotes solar mass units. Our estimates are respectively, $1.164 \times 10^{12} M_{\odot}$ and $5.906 \times 10^{11} M_{\odot}$. We used the same data as Wilkinson and Evans.