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DARK MATTER IN TRIPLE GALAXIES

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On the basis of numerical simulation of the dynamics of triplets of galaxies, virial estimation of the individual masses of triplets is shown to be unreliable because of their strong nonsteadiness and projection effects: the spread in estimates due to these two factors reaches 2 orders of magnitude. However, the mass of a typical small galaxy group can be estimated statistically, from data on a whole homogeneous ensemble of groups. We propose two different methods of such statistical estimation. Triplets of galaxies offer a good opportunity to measure the amount of dark matter in them, especially because one can use the extensive data set on triplets by Karachentsev *et al.* (1989). The mass estimates we obtain for the typical group from the Karachentsev's list have more than 5 times excess compared to the visible mass, when a standard mass-to-light ratio is assumed. The typical masses of loose triple galaxies selected from Huchra & Geller (1982) and Maia *et al.* (1989) catalogues of galaxy groups are also estimated as $\approx 21 M_L$ and $\approx 100 M_L$ correspondingly. The influence of dark matter distributed in the common envelope on the dynamical properties and the merging rate in small galaxy groups are also considered. It is found that the significant dark matter makes motion of galaxies in groups more stocastic, increases the number of close double approaches between galaxies and increases slightly the merging rate. At the same time, the dark matter significantly decreases the number of long-lived temporary binary subsystems formed inside triplets.

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