CONCENTRATION TIME CORRELATION FUNCTIONS OF BINARY LIQUIDS: IONIC MELTS AND MIXTURES OF NEUTRAL PARTICLES

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S u m m a r y

Analytical expressions that satisfy the sum rules up to the fourth order included have been obtained for the time correlation functions of binary liquid mixtures composed of either charged or neutral particles. Calculations were performed for an extended set of dynamic variables which, along with the concentration density, includes also its first and second time derivatives. The results of calculations were used to make a comparative analysis between the dynamic behaviors of ionic melts and binary mixtures of neutral particles. It was shown that, owing to specific features of interactions in ionic melts, there is a number of important differences between the behaviors of those two kinds of liquids. In particular, the obtained results demonstrate an incomprehensive character and inconsistency of the standard hydrodynamic approach for the description of ionic melts.