

Abstract Submitted
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The sensitivity of calculated ion transport coefficients for testing ion-neutral interaction potentials MARK HOGAN, U. S. Merchant Marine Academy — Several commonly measured ion transport coefficients were investigated in order to determine their sensitivity when used for testing the accuracy of proposed ion-neutral interaction potentials. The level of sensitivity was taken to be the average percentage difference between values of an ion transport coefficient calculated from two interaction potentials. 93 sets of comparisons were carried out. A variety of positive ions, negative ions, neutrals and temperatures were included in the comparisons done in order to draw as general a conclusion as possible. The sensitivity was determined to be 5.2% for mobility, 10% for the ratio of the transverse diffusion coefficient to mobility, 16% for the ratio of the longitudinal diffusion coefficient to mobility, 17% for the transverse diffusion coefficient, and 23% for the longitudinal diffusion coefficient. In particular, it was found that the longitudinal diffusion coefficient is the most sensitive test and that the mobility is the least sensitive test.

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