Erratum: Properties of strongly dipolar Bose gases beyond the Born approximation [Phys. Rev. A **94**, 063638 (2016)]

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The numerical scattering calculations presented in the original article were not fully converged at high partial waves, which has led to an erroneous contribution to the scattering amplitudes. We provide the corrected results in Fig. 1. In particular, the correction to the effective a_{dd} parameter for Dy at a collision energy of 100 nK is now of the order of 10%. The amplitudes are still well described by a simple change in the effective dipolar length. Furthermore, we would like to stress that the correction is strongly energy dependent and for 10 nK the results are only 2% above the Born approximation predictions. For Dy₂ the effect is stronger, and at 10 nK the correction to a_{dd} is around 4%. The scattering length at which the effective dipolar length drops to small values due to the unitarity limit depends not only on the dipole moment, but also on the collision energy at which the calculations are performed.

These changes do not significantly affect other results presented in other figures of the article, except for the stability diagram of the self-bound droplet presented in Fig. 2. The stability boundary is now closer to the Born approximation in all cases. The conclusions of the article remain the same.

FIG. 1. Effective dipolar length as a function of $\epsilon_{dd}^{\text{Born}}$ for dysprosium at 10 nK (blue straight line) and 100 nK (red dashed line) and Dy₂ (dotted-dashed magenta line). The dotted black line shows the Born approximation result $a_{dd}/a_{dd}^{\text{Born}} = 1$.

FIG. 2. Droplet stability diagram for Dy and Dy₂ with an appropriate a_{dd} as a function of the number of particles N and $\epsilon_{dd}^{\text{Born}}$ calculated using the simplified Gaussian ansatz.