

**Corrections for:**  
Density Potential Functional Theory in  
position and momentum space and its  
implementation using the Machine Learning library  
PyTorch

A Dissertation presented to the  
National University of Singapore

for the degree of Bachelor of Science (Hons.) in Physics

Ding Ruiqi

Supervisor: Prof. Berge Englert

March 2020

## 0.1 Equations (3.38), (4.11)

Change from

$$V_{\text{dd}}^{\text{pos}} := \frac{\delta E_{\text{dd}}}{\delta \rho(\mathbf{r}_a)} = \frac{\mu_0}{4\pi \mathbf{r}^3} \int d\mathbf{r}_b \left[ -3 \frac{(\boldsymbol{\mu} \cdot \mathbf{r})^2}{r^2} + \boldsymbol{\mu}^2 \right]_{\mathbf{r}=\mathbf{r}_a-\mathbf{r}_b} \quad (1)$$

to

$$V_{\text{dd}}^{\text{pos}} := \frac{\delta E_{\text{dd}}}{\delta \rho(\mathbf{r}_a)} = \frac{\mu_0}{4\pi} \int d\mathbf{r}_b \frac{1}{r^3} \left[ -3 \frac{(\boldsymbol{\mu} \cdot \mathbf{r})^2}{r^2} + \boldsymbol{\mu}^2 \right]_{\mathbf{r}=\mathbf{r}_a-\mathbf{r}_b} \quad (2)$$