



Erratum on the Authors Work So Far

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In our work so far we have given some basic equations but we have to put them forth again for there were some minor mistakes in the assignment. We also would like to mention that chi the dielectric susceptibility has not been given a value yet. So we begin with a summary of our work:

Our system is described by swirling droplets or else spherical vortex with mass distributed spherically.

The final equation describing the situation is

$$-\frac{\hbar^2}{2m} \ddot{A} |\psi|^2 = \frac{VdP}{dV} = \frac{|\psi|^2 mc^2}{\chi N} = \frac{dS}{dVdt} = \hbar I = \frac{\hbar dm}{dt} \quad (1)$$

$$\frac{\hbar^2}{2m} |\psi| \ddot{A} |\psi| = \chi \dot{U} = \sigma K = \frac{|\psi|^2}{N} Q \quad (2)$$

Omega=-PV

Sigma is the surface tension

S is the action

K is the constant curvature

Chi is the dielectric susceptibility

According our findings and taking in mind the fact that Marangoni flow of droplets moves them by the gradient of the surface tension which is the force density we have the

extra equation:

$$\psi^* \frac{d\bar{v}}{dt} = i\bar{j}Q + K\nabla\sigma = i\bar{j}Q + \frac{d\bar{F}}{dV} \quad (3)$$

Q is the quantum potential

$$Q = E - U - 1/2m \left(\frac{d\bar{r}}{dt} \right)^2 \quad (4)$$

$$\frac{d\bar{r}}{dt} = \frac{\hbar}{m} \nabla\phi + e/c\bar{A} \quad (5)$$

References

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