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Alternative physical meaning of Navier- stoke equation

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Abstract

In this article was explored on the flow properties of liquid in the aspect of physical approach rather than mathematical description. Here, discussed origin of force in certain order and this one was may guide the particle microscopically to flow all the particles with in the system. The Lagrange formulation was helped much to know the force origin then finally this was equated by the Einstein molecular diffusion equation these two are support the flow of liquid reasonably certain limit of our realization of flow of liquid.

Keywords: Surface tension, Viscosity, Space and time

Discussion

Atomic theory of flow of matter

The liquid state of molecules having the flexible bonding nature this has to be allowing the molecules to form the entanglement one another. The order of entanglement is give rise to the viscosity level of liquids. The applied pressure and temperature are making the release the entanglement and help the higher fluidity of molecules.

Then rewrite the Einstein equation,

$$\Delta^2 = \frac{KT}{3\pi\eta r} t$$

Take $\frac{2KT}{r} = \sigma$,

$$\Delta^2 = \frac{\sigma}{3\pi\eta r} t$$

$$\frac{\sigma}{\eta} t = \frac{3}{2} \pi \Delta^2$$

$$\frac{\sigma}{\eta} = \frac{3}{2} \pi \frac{\Delta^2}{t}$$

$$\frac{\sigma}{\eta} = \pi(\frac{1}{2}\frac{\Delta^2}{t} + \frac{1}{2}\frac{\Delta^2}{t} + \frac{1}{2}\frac{\Delta^2}{t})$$

$$\frac{\sigma}{\eta} = \pi(\frac{1}{2}\frac{\Delta^2}{t})$$

$\pi(\frac{1}{2}\frac{\Delta^2}{t})$-areal velocity is constant.

Using Kepler third law, square of the period of the varies atoms or molecules are proportional to the cube of the major axis.

This results are may prove the layer of liquids and the variation of viscosity level related by the time and distance relation of the volume of the liquid.

In reality is our physical system not to go more than two therefore this form of mathematical structure to be hold more properly our realization of particle transformation within the liquid system.

Then we have to take into account the collective transformation of molecular movements in the space of the liquids in the varies phase. Then the mass flow in the space is depending on the total applied energy of the system.

H ψ=e^{-iEt}ψ

The applied energy e^{-iEt} is impart on the particles they were split into the two components $e^{\pm iEt}$.Here this will tell the truth of size of the mass and its transformation in the space. And in this context we are omitted the other force of interactions on the particles.

Energy and mass conservation of the particles in the space is $e^{\pm iEt} = \Delta\, m\, c^2$ here the mass is an estimated by the line element Δ.The energy distribution of the state of matter in the space is $e^{\pm iEt}$ and mainly in the liquid state of matter is $e^{\pm iEt} = \Delta\, m\, c^2 = \sqrt{\frac{KT}{6\pi\eta r}\, t}\ \ m\, c^2 = \delta w(pot)$.

We are putting some correction factor minus sign to overcome the mathematical imbalance of the physical and chemical systems.

$$e^{\pm iEt} = -\sqrt{\frac{KT}{6\pi\eta r}\, t}\ \ m\, c^2$$

The mass conservation and its level of motion are depending on the energy gradient of the liquid. In reality mass and energy is conserving higher state to lower state $e^{\pm i(E_2-E_1)t}$.

The molecular motion in the space is $= -\sqrt{\frac{K(T_2-T_1)}{6\pi(\eta_2-\eta_1)(r_2-r_1)}}\ (t_2-t_1)\ \ (m_2-m_1)\, c^2$

Above result is tell the ideas of two particles are molecular transformation in the liquid. Then we have to do the work of multi component systems to take the many components interaction of the single particle.

$$\delta w = \sum_{m}^{n} e^{\pm i(E_m-E_n)t}$$

Then rewrite W=$-\sqrt{\frac{KT}{6\pi\eta r}\, t}\ \ m\, c^2$,

$$(W_2 - W_1) = -\sqrt{\frac{K(T_2-T_1)}{6\pi(\eta_2-\eta_1)(r_2-r_1)}}\ (t_2-t_1)\ \ (m_2-m_1)\, c^2$$

Possibility and probability of work done of the system is $(W_m - W_n) = -\sqrt{\frac{K(T_m - T_n)}{6\pi(\eta_m - \eta_n)(r_m - r_n)}}\ (t_m - t_n)\ (m_m - m_n)c^2$.

Then,

$$\frac{(W_m - W_n)}{(t_m - t_n)} = \sqrt{\frac{K(T_m - T_n)}{6\pi(\eta_m - \eta_n)(r_m - r_n)}}(m_m - m_n)c^2$$

$$(E_m - E_n) = \sqrt{\frac{K(T_m - T_n)}{6\pi(\eta_m - \eta_n)(r_m - r_n)}}(m_m - m_n)c^2$$

$$L = (E_m - E_n) - \sqrt{\frac{K(T_m - T_n)}{6\pi(\eta_m - \eta_n)(r_m - r_n)}}(m_m - m_n)c^2 = 0$$

L=T-V

$$\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}}\right) - \frac{\partial L}{\partial q} = 0$$

Lagrange equation was to give the generation of impulse of molecular forces that to drive the flow of liquid from out.

Conclusion

The flow is an one of the properties of the liquid and this was arrived at the applied physical forces creation by the varies physical forces fluctuation. Then it is transforming in the space distance with respect to function of time in the space.

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