Review of: "Dynamic structure factors and equation of state of fluid iron under Earth's core condition"

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Potential competing interests: No potential competing interests to declare.

Title: Physics informed neural networks with different training strategies to investigate the Jeffery Hamel copper-blood problem: a comparative analysis

Authors discussed the geodynamics of the activity of Earth's outer core, which is mainly made of fluid iron. The *ab initio* molecular dynamics were adopted for the calculations of ion-ion dynamic structure factors and the equations of state of pure iron under Earth's core conditions. The calculated static structure factors, ion-ion dynamic structure factors, and dispersion curve of pure iron were consistent with the reported *in situ* x-ray diffraction and inelastic x-ray scattering measurements. The article is good and falls within the scope of the journal, so I recommend it for publication with major revisions, i.e.,

i. Give a reference for the flow equations that is missing.
ii. Please elaborate on something about the geometry.
iii. Typo and grammatical errors must be removed.
iv. Give a practical application of the problem.
v. Justify the boundary conditions with explanation.
vi. Improve the discussion section with the following recent articles, i.e.,
vii. https://doi.org/10.1016/j.aej.2023.09.027, https://doi.org/10.1002/mma.7906

https://doi.org/10.1177/09544089221140703, https://doi.org/10.1016/j.aej.2023.05.056

https://doi.org/10.1016/j.csite.2023.103932,https://doi.org/10.1038/s41598-023-38820-4, https://doi.org/10.1038/s41598-023-51017-z, https://doi.org/10.1038/s41598-023-45595-1, https://doi.org/10.1016/j.csite.2024.104009

vi. Give the convergence criteria of the method.