Review of: "Classical Explanation of Absorption Spectra"

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Potential competing interests: No potential competing interests to declare.

The paper “Classical Explanation of Absorption Spectra” offers a thought-provoking exploration into the challenges associated with interpreting absorption spectra in a gas of specific atoms confined within a chamber with perfectly reflective inner walls. The author critically examines the conventional understanding of absorption processes, highlighting a fundamental discrepancy between theoretical predictions and empirical observations. However, some issues need to be addressed before publication.

Comments:

1. This paper raises a thought-provoking challenge to the conventional understanding of absorption spectra in gases filled with atoms. The premise that the electron in an atom must oscillate at the frequency of the light wave it produces during a transition is fundamental, yet, as the paper argues, no existing atomic model adequately supports this notion.
2. This raises significant questions about the persistence of this black line regardless of the duration of light exposure, which challenges conventional explanations based on photon absorption. The paper advocates for a deeper exploration of these phenomena, suggesting that certain aspects may have been overlooked in the pursuit of understanding absorption spectra.
3. This paper prompts a reevaluation of existing theories surrounding absorption spectra and calls for further investigation into the mechanisms at play in the interaction between light and atoms within a gas environment.
4. The mention of conservation of energy is a critical point that emphasizes the need for a more comprehensive explanation beyond traditional photon absorption models.
5. Can you provide more context or examples of existing atomic models that fail to support the notion of electron oscillation at the natural frequency of the atom?
6. How might experimental evidence or simulations support or refute the proposed cancellation effect leading to black lines in the absorption spectrum?
7. Are there any alternative theories or approaches in the literature that address the challenges presented in this paper?
8. Could you expand on the implications of this analysis for broader fields such as quantum mechanics or spectroscopy?