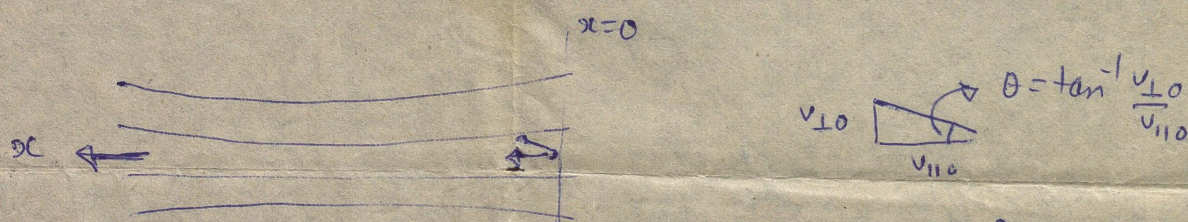


C. H. Mehta
 8/11, Kaulagarh Rd
 Dehra Dun 248001
 27 April 1990

My dear Ram bhai,

Greetings!

I did not write to you earlier, because I was hoping to understand your paper and your recent experiment. Then, finally, I became afraid that I may have to differ writing to you indefinitely in that case. However, let me at least put across what I don't understand.



Considering the effective potential $V(x) = \frac{1}{2} m v_{10}^2 \frac{B(x)}{B(0)}$, particles will be reflected classically if

$$\left| \frac{v_{110}}{v_{10}} \right| < \left(\frac{B_{\max}}{B} - 1 \right)^{1/2} \quad \text{--- (1)}$$

For a normal electric gun, the electrons will have a distribution over $(v_{110}/v_{10}) = \tan \theta$, and those which fulfill the above reflection condition are classically expected to get reflected. (This is different from ~~that~~ reflection due to distribution in Larmor phase - which I don't understand as the condition of reflection is independent of azimuth).

If the reflection is due to as in (1) then reflection current will depend upon ~~incident~~ energy distribution in $\tan \theta$ which can be altered experimentally by putting a small accelerating or decelerating voltage just inside the gun. If the reflection is ~~sole~~ for subtle reasons such as

distribution in laminar phase than reflected current will be independent of the retarding / accelerating voltage - as long as the voltage (field) is only in x direction

So far as dependence of the reflected current on the electrode on the left is concerned, is it possible that ~~presence~~ position of the electrode is influencing the magnetic field & ~~also~~ location of B_{max} ?

If you can spare time, I would be delighted to hear from you and correct my thinking, if wrong.

Prabha's address is 1797, McCLuhan Way, California 95132. Please ~~you~~ convey this to Soniya Jular.

Did you receive a letter, which I had drafted, from ~~our~~ our Director?

Here I remain quite busy with our office work 50% geophysical, 30% mathematical & programming, and rest purely paper work. For instance, recently, I am ~~re~~ entrusted with ~~comp~~ computerization of our institute and the job involves procuring large scale PC's for different groups with different requirements, creating posts of programmers, haggling with Finance, stores, and Personnel group. I do it with just about as much zeal & as I wash clothes & utensils when my wife and maid are away.

Please convey my regards to Respected Bhabhiji, Sonu & Mr. Majumdar (?) - A.I. expert.

With best wishes, yours affectionately
Chetan

P.S. Pl. do send your preprints on this work
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