

Re: Simple Sagnac

Source: <http://sci.tech-archive.net/Archive/sci.physics.relativity/2005-08/msg00616.html>

- *From:* "Androcles" <Androcles@ MyPlace.org>
 - *Date:* Sat, 06 Aug 2005 18:51:32 GMT
-

"sue jahn" <susyshow@xxxxxxxxxxxx> wrote in message
[news:42f4fc16\\$0\\$18646\\$14726298@xxxxxxxxxxxxxxxxxxxx](mailto:news:42f4fc16$0$18646$14726298@xxxxxxxxxxxxxxxxxxxx)
|
| "Androcles" <Androcles@ MyPlace.org> wrote in message
[news:8F5Je.11771\\$ia4.7564@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:8F5Je.11771$ia4.7564@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)
|>
| snip
|> Did you have a point to make?
|> Maybe this is what's bothering you.
|>
|> "Another proof, more closely related to the present discussion, may
be
|> made by the following modification of a demonstration due to
Langevin.
|> Consider a source which is at rest with respect to an observer O and
|> which radiates a simultaneous, oppositely directed pair of equal
quanta,
|> hu, e.g., annihilation radiation. While the total energy radiated is
?E
|> = 2hu, the total momentum radiated is zero, so the source remains at
|> rest with respect to O.
|>
|> Now, consider this phenomenon from the point of view of an observer
O'
|> who moves with respect to O with the constant velocity $v = bc$ along
the
|> line defined by the radiation. On account of the first-order
Doppler
|> effect O' observes two quanta with the frequencies $hu(1 + b)$ and hu
|> $(1 - b)$. He thus concludes that a net amount of momentum
 $hu(1+b)/c - hu$
|> $(1-b)/c = 2hub/c$ is emitted in the direction in which the source and
O
|> appear to move with respect to him. From the conservation principle
for
|> momentum he concludes that the source loses this same quantity of
|> momentum. Now the velocity of the source with respect to O' does
not

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|> change since it remains at rest with respect to O, as has been seen.
|> Thus O' is forced to conclude that the mass of the source has
decreased
|> by an amount Dm , where $(Dm)u = 2h\nu/c$. Thus, $Dm = DE/c^2$." J.G.Fox.
|
| Eh! Freight charges across the channel are high.
| Freight charges from China are higher.
| If ya don't like it then start a cottage industry in hu manufacture.
|
| Sue...

If ya don't like the Chinese, read the original paper with greek in it.
I'm not responsible for Usenet or 8-bit-Uencode, whatever that is.

|> Androcles
|>
|>
|>
|>
|> |>
|> |> | <http://physics.nist.gov/cuu/Images/alphaeq.gif> <-----ignored
|> unopened.
|> |> |
|> |> | There are no funny clocks in that tho' which I believe
|> |> | is the gist of your gyrations.
|> |>
|> |> | Sue...
|> |>
|> |> There are no funny clocks. <----- see the period?
|> |> Let's try this again.
|> |> Sue doesn't need to tell Androcles about funny clocks.
|> |> There are no funny clocks[period]
|> |> My gyrations are intended to show that there can be no
|> |> funny clocks. Funny clocks are proposed by others and
|> |> I'm having my fun shooting them down. Not from the hip.
|> |> I take careful aim. Both hands on the rifle, telescopic sights
|> |> aimed on the target. Don't walk in front of me when I pull
|> |> the trigger, or you'll be accidentally shot, and don't tell
|> |> me my aim is off you'll be deliberately shot.:-)
|> | Yikes! A threat. I'm tellin' Tony.
|> | ... On second tho't, I wouldn't wish your phast fotons on
|> | the physics community of even the rogeust of states. :o)
|> |
|> | Sue...
|> |
|> |> Androcles
|> |
|>
|
|

• **References:**

- ◆ **Re: Simple Sagnac**
◇ From: Bilge
- ◆ **Re: Simple Sagnac**
◇ From: Dirk Van de moortel
- ◆ **Re: Simple Sagnac**
◇ From: sal
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◇ From: sal
- ◆ **Re: Simple Sagnac**
◇ From: Daniel Cook
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◇ From: sal
- ◆ **Re: Simple Sagnac**
◇ From: bsr3997@xxxxxxxxxxxx
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◇ From: sue jahn
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