

Re: Simple Sagnac

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- *From:* sal <pragmatist@xxxxxxxxxxx>
 - *Date:* Fri, 29 Jul 2005 10:43:19 -0400
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The problem here is really that the "classical" case is a squishy fiction without hard rules.

Light is carried by a aether in vacuum and travels at c relative to that aether, sure, no prob. But then when the light's passing through air, or glass, or water, how fast does it go, and what's that speed relative to? If you're talking about a fictitious "classical universe" you can make up any rule you like, so it's hard to say the "classical" case doesn't match some experiment involving a medium -- just change the rules until it does, hey hey.

Sagnac himself didn't address the presence of a medium; he assumed he could ignore the effect of the air in his apparatus, and just assume the light traveled at C relative to the "fixed frame" (I think he thought there was an aether but I'm not sure).

But we know now, from experiments, that light *is* dragged with the medium, at least when the medium is something substantially thicker than air. So, just assuming "no drag" in all cases when talking about the effect from a classical perspective doesn't make a lot of sense. (And for a "thick" medium with substantially reduced speed of light, it also doesn't lead to the correct results, as mentioned previously.)

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Nospam becomes physicsinsights to fix the email

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- *Follow-Ups:*
 - ◆ ***Re: Simple Sagnac***
 - ◇ *From:* Daniel Cook
- *References:*
 - ◆ ***Re: Simple Sagnac***
 - ◇ *From:* Bilge
 - ◆ ***Re: Simple Sagnac***

Re: Simple Sagnac

◇ *From:* Dirk Van de moortel

◆ ***Re: Simple Sagnac***

◇ *From:* sal

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