Comment on the paper of Filip Dambi ["Velocity of light through a moving medium", GS Journal]

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Filip Dambi writes: "*The core of this derivation is based on the fact that light in a moving medium travels through densities that differ from the density of that medium at rest.*"

This assumption contradicts empirical knowledge. The density of a medium does not change when the medium is moving.

Another important property of a medium like water is inhomogeneity of the medium - it consists of point-like particles like electrons, protons, and neutrons. Thus, the medium is almost completely empty space. Only small portions of the medium are moving, but the empty space between particles does not move – "emptiness" cannot move. The empty space is indeed not supposed to be empty – because in this case, the emission theory of light would be valid in the space between the particles of the medium. Instead, it is supposed that space is filled with the light-bearing medium (the new name of that medium is "spacetime"). According to Fresnel, only small portions of the light-bearing medium (the old name is "luminiferous ether") are dragged by the electron shells of the water. This assumption of Fresnel was experimentally verified in numerous experiments.

Figure 2 and figure 3 in the paper contradict the figure 5 because the length of the water tube in the experimental arrangement of Fizeau is constant. So, the derivations in the paper cannot be applied to that arrangement. Contrary to this derivation there are several other derivations of the ether drag coefficient which are not based on wrong assumptions [1, 2, 3]. The so-called relativistic derivation contradicts the measurements with fiber optic gyroscope because according to Laue the light should be completely carried by the medium (Laue: "So, according to the relativity principle, light is completely carried by the body...") [4]. Thus, the Fizeau experiment disproves Special relativity.

The speed of light in the moving medium according to Filip Bandi is $c_2 = \sqrt{c_1^2 + (v/2)^2} + v/2$ and $c_2 = \sqrt{c_1^2 + (v/2)^2} - v/2$. If this is written as Taylor series it gives:

$$c_2 = c_1 \pm v/2.$$

The correction $k = 0.5$ is independent of the index of refraction and it is only "accidentally" close to Fresnel drag coefficient of water $k = 1 - \frac{1}{n^2} = 0.43$.

References

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3. Giuseppe Antoni, Umberto Bartocci: A Simple "Classical" Interpretation of Fizeau's Experiment. Apeiron, Vol. 8, No. 3, p. 139.

4. M. Laue: Die Mitführung des Lichtes durch bewegte Körper nach dem Relativitätsprinzip [*The Entrainment of Light by Moving Bodies in Accordance with the Principle of Relativity*]. Annalen der Physik. 23, 1907.