

Michelson and Morley

Often the null result of the 1887 Michelson-Morley experiment, as well as similar experiments at the beginning of the 20th century, are presented as evidence refuting a universal and absolute frame of reference. Seemingly ignored is the understanding that the [failure to reject a null hypothesis](#), the absence of evidence, is not [evidence of absence](#).

In fact, a 1998 paper by Héctor A. Múnera at *Centro Internacional de Física* (Bogotá D.C., Colombia) analyzes Michelson and Morley results and may correctly show that the MM experiment (as well as duplicate experiments by others) do indicate velocities consistent with the combined orbital and rotational velocities of the Earth. This would be evidence of a reference frame (i.e. "ether wind") stationary with respect to our Solar System.

Despite the null interpretation of their experiment by Michelson and Morley, it is quantitatively shown that the outcomes of the original experiment, and all subsequent repetitions, **never were null**. Additionally, due to an incorrect inter-session averaging, the non-null results are even larger than reported. Contrary to the received view, Illingworth's and other repetitions of the experiment were consistent with Miller's positive results.

The intra-session averages based on velocity **exactly correspond to the range of variation of the projection of orbital speed** at the moment and location of the observations.

[\[M\]ichelson-Morley Experiments Revisited: Systematic Errors, Consistency Among Different Experiments, and Compatibility with Absolute Space](#)

Revision #10

Created 1 August 2023 21:21:55 by giw

Updated 12 August 2023 06:25:19 by giw