

Abstract Submitted
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The Sagnac Effect and the Ritz Theory JAMES ESPINOSA, Weatherford College, JAMES WOODYARD, West Texas AM University — The Sagnac experiment was performed in 1913 to prove the existence of the aether; it consists of sending two beams of light in opposite directions in a closed loop which is rotated around its central axis producing a shift in the observed fringes. Its positive results were interpreted by the physics community as support for Einstein's theory of relativity and a further blow to aether theories. In 1960, Fox revived an interest in an alternative theory created by Walter Ritz in 1908 which remained within the framework of Newtonian mechanics. Ritz's theory had been viewed as discredited by experiments such as Fizeau and Sagnac. He concluded that with the introduction of a modification mentioned in Ritz's notes, which Fox called the extinction theorem, these experiments were now explained by Ritz also. In the early 21st century, several Russian physicists have revived the original proposal of Ritz and have been reminded by Malykin of the futility of this approach with regard to the Sagnac effect. After a short description of the experiment of Sagnac, we will present a modified Ritz theory that has overcome the objections of Fox with regard to fast moving sources and apply this recent approach to the Sagnac effect.

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