

Abstract Submitted  
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**An Introduction to Gravitational Frenetics I: The Nature and Physical Significance of the Frenetic Field** MICHAEL JAY SCHILLACI, Roberts Wesleyan College — After providing a very short review of Classical gravitomagnetism I will present a novel framework for the development and extension of the Classical theory of gravity. Specifically, I will first discuss the proposed, Lorentz-like force experienced by a moving mass in the presence of a rotating gravitational source, and then I will provide a first principles definition of the proposed *Frenetic Field*. Of note this field has units of frequency and so provides for straight-forward comparison with previous Classical results. i.e., The Lens-Thirring Effect. I then continue with a discussion of a general gauge constraint of the Frenetic field in terms of a velocity field which depends upon both the mass and rotational velocity *of* and the distance *to* the source. This framework allows for direct comparison with Relativistic predictions where I find (minimally) first-order agreement for the refraction of light by a rotating gravitational source, and provide for a robust description of the temporal character of these "lenses" in terms of an absolute time parameter. I will conclude by extending the theoretical framework to the case of many sources and discuss implications for the evolution of accretion disks due to possible gravito-frenetic wave phenomena.

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