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Andrew S Goetz* (agoetz@math.duke.edu), Duke University Mathematics Department, Box 90320, Durham, NC 27708, and **Hubert L Bray**. *Wave Dark Matter and the Tully-Fisher Relation.*

We describe a theory of wave dark matter—also known as scalar field dark matter (SFDM) and boson star dark matter or Bose-Einstein condensate (BEC) dark matter—in spherical symmetry and its relation to the Tully-Fisher relation. We show that fixing the oscillation frequency of wave dark matter near the edge of dark galactic halos implies a Tully-Fisher-like relation for those halos. We then describe how this boundary condition may yield testable predictions for this theory of dark matter. (Received September 22, 2014)