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Wake characteristics of a model ornithopter ALFREDO JUAREZ, New Mexico State University, JACOB HARLOW, New Mexico State University, JAMES ALLEN, New Mexico State University, PAULO FERREIRA DE SOUSA — This paper details unsteady wake measurements from a model Ornithopther flying in a wind tunnel at representative flight conditions. Testing over a range of Strouhal number, 0.1-0.3, shows that the unsteady wake is composed of coherent vortical structures that resemble vortex rings. A single ring is formed in the wake of each wing during one wing beat. Momentum balance from velocity field measurements are reconciled with unsteady lift and drag measurements from a drag balance.

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