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**D Evangelista\*** (devangel@live.unc.edu), Coker Hall CB #3280, Chapel Hill, and **T Hedrick**.  
*Measurements and models of large flocks of Chimney Swifts entering a chimney roost at dusk*. Preliminary report.

Chimney Swifts (*Chaetura pelagica*) are highly maneuverable social birds notable for roosting overnight in chimneys in groups of hundreds or thousands of birds. At dusk, birds gather in large numbers from surrounding areas near a few suitable roost sites. They then enter a very small aperture within a very short time, with the whole flock employing an orderly, but dynamic, circling pattern, even as winds shift and light levels decrease. Such repeatable, reliable behavior in a convenient urban area with fixed landmarks provides an excellent opportunity to use multi-camera videography to measure three dimensional kinematics of natural flight behavior, in the field and under challenging lighting conditions. We will describe ongoing efforts to automatically track every bird in the flock. We will also discuss kinematic and information metrics appropriate for analyzing the tracks, modeling components of the behaviors, and examining differences between strongly and weakly ordered group flight behaviors in other bird species. Information transfer within the flock may assist in accomplishing such a difficult navigational task. (Received September 20, 2014)