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**Spanwise drag variation on low Re wings – revisited** SHANLING YANG, GEOFFREY SPEDDING, University of Southern California — Aerodynamic performance measurement and prediction of airfoils and wings at chord Reynolds numbers below $10^5$ is both difficult and increasingly important in application to small-scale aircraft. Not only are the aerodynamics strongly affected by the dynamics of the unstable laminar boundary layer but the flow is decreasingly likely to be two-dimensional as Re decreases. The spanwise variation of the flow along a two-dimensional geometry is often held to be responsible for the large variations in measured profile drag coefficient. Here we measure local two-dimensional drag coefficients along a finite wing using non-intrusive PIV methods. Variations in $C_d(y)$ can be related to local flow variations on the wing itself. Integrated values can be compared with force balance data, and the proper description of drag components at low Re will be discussed.

Geoffrey Spedding
University of Southern California

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