

**FINITE TIME BLOW-UP OF SOLUTIONS TO PRANDTL'S  
EQUATION**

Bjorn Engquist

Department of Mathematics. Institute for Computational and Engineering Sciences  
UT Austin

The Prandtl boundary layer equation is an approximation to the Navier-Stokes equations in a laminar boundary layer. With a monotone velocity profile this equation is well behaved with the analysis going back to results by Olienik. We will show that finite time blow-up is possible when the monotonicity condition is violated and we conjecture short time existence in general.