

Transition on sphere-cone frustra as affected by nosetip conditions. Nosetip roughness cp. to PANT correlation.

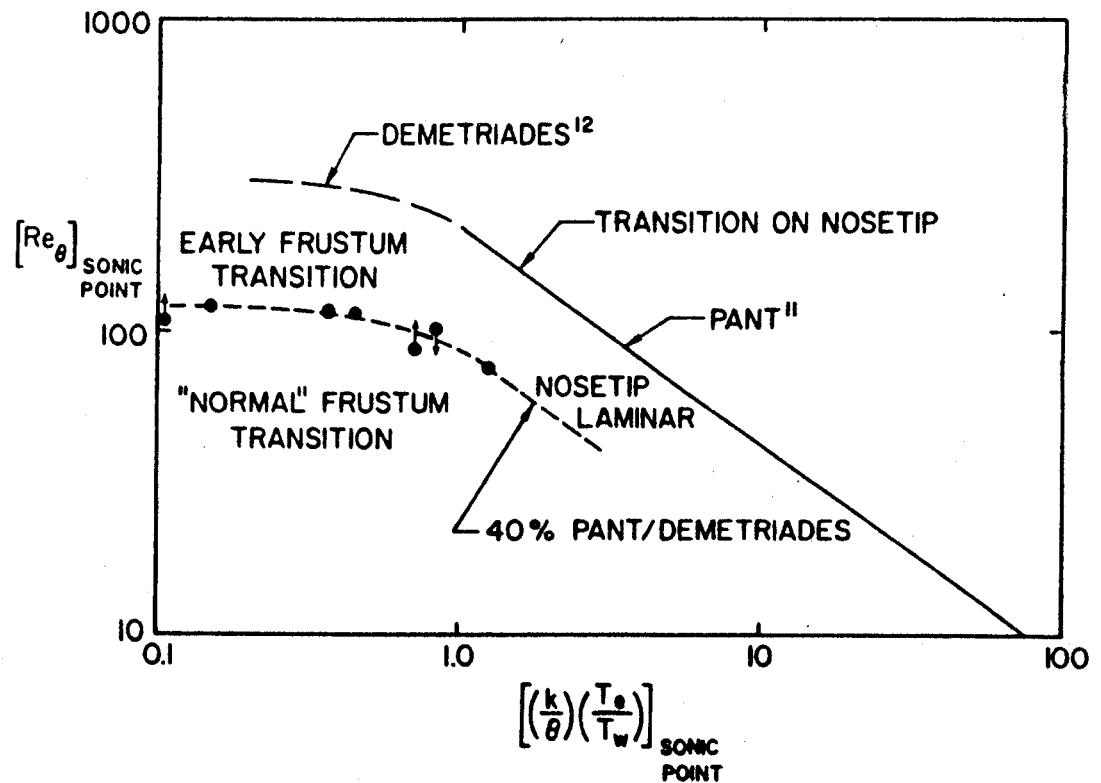


FIGURE 10 Nosetip instability effects on cone frustum transition.

Excellent paper on blunt nose effects at zero AOA. Here, transition distance far less than swallowing length. Transition not repeatable here, and not symmetrical, as opposed to cases with less bluntness. Nosetip develops roughness due to AFFDL Mach-6 tunnel particles; nosetip also heats with time. Extended discussion in paper. 'Early frustum transition' is early compared with a smooth nosetip. Effect of roughness first seen at about 40% of PANT correlation. For smaller roughness on nosetip, no effects; for roughness between 40% and 100%, transition occurs on frustum but is affected by nosetip roughness.

# Nose Roughness Can Affect Frustum Transition

