

Abstract Submitted
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Natural by-pass boundary layer transition¹ SHAHAB SHAHINFAR,
JENS H.M. FRANSSON — The present measurement campaign on the free-stream
turbulence induced boundary layer transition scenario has provided a unique set
of experimental data, with potential to enhance the understanding of the effect of
the free-stream turbulence characteristic length scales on the transition location and
not only the turbulence intensity, which has been the focus in most previous stud-
ies. Recent investigations where the turbulence intensity has been kept essentially
constant, while the integral length scale has been changed, show that the transition
location is advanced for increasing length scale. However, the present data show that
the integral length scale has a relatively small influence on the transition location
as compared to the turbulence intensity and data analyses are now directed towards
enhanced understanding of how the different parts of the incoming energy spectrum
affects the energy growth inside the boundary layer.

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