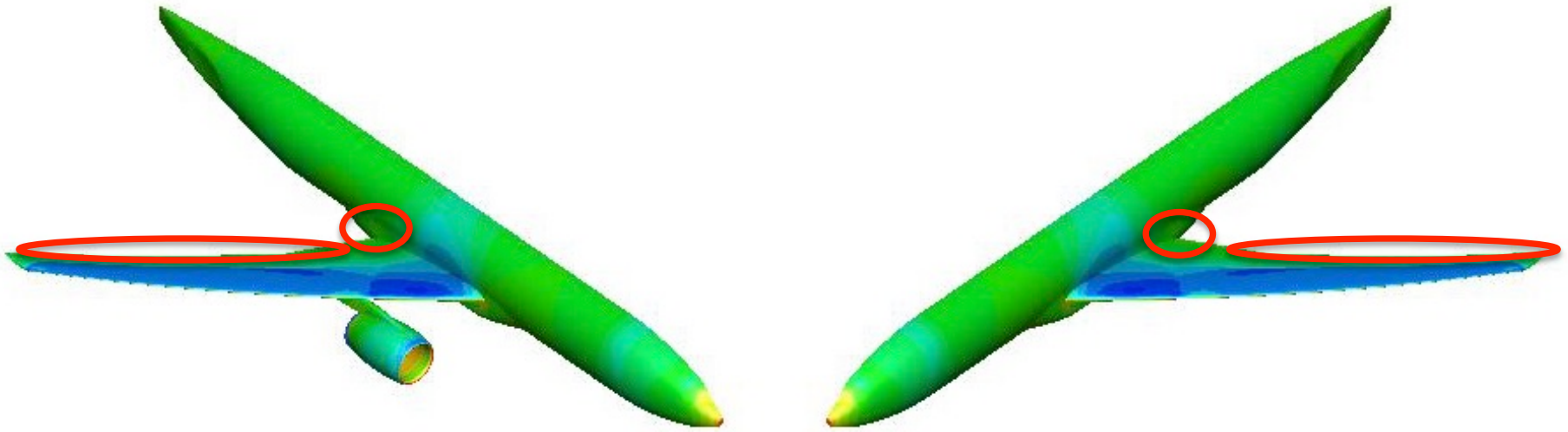
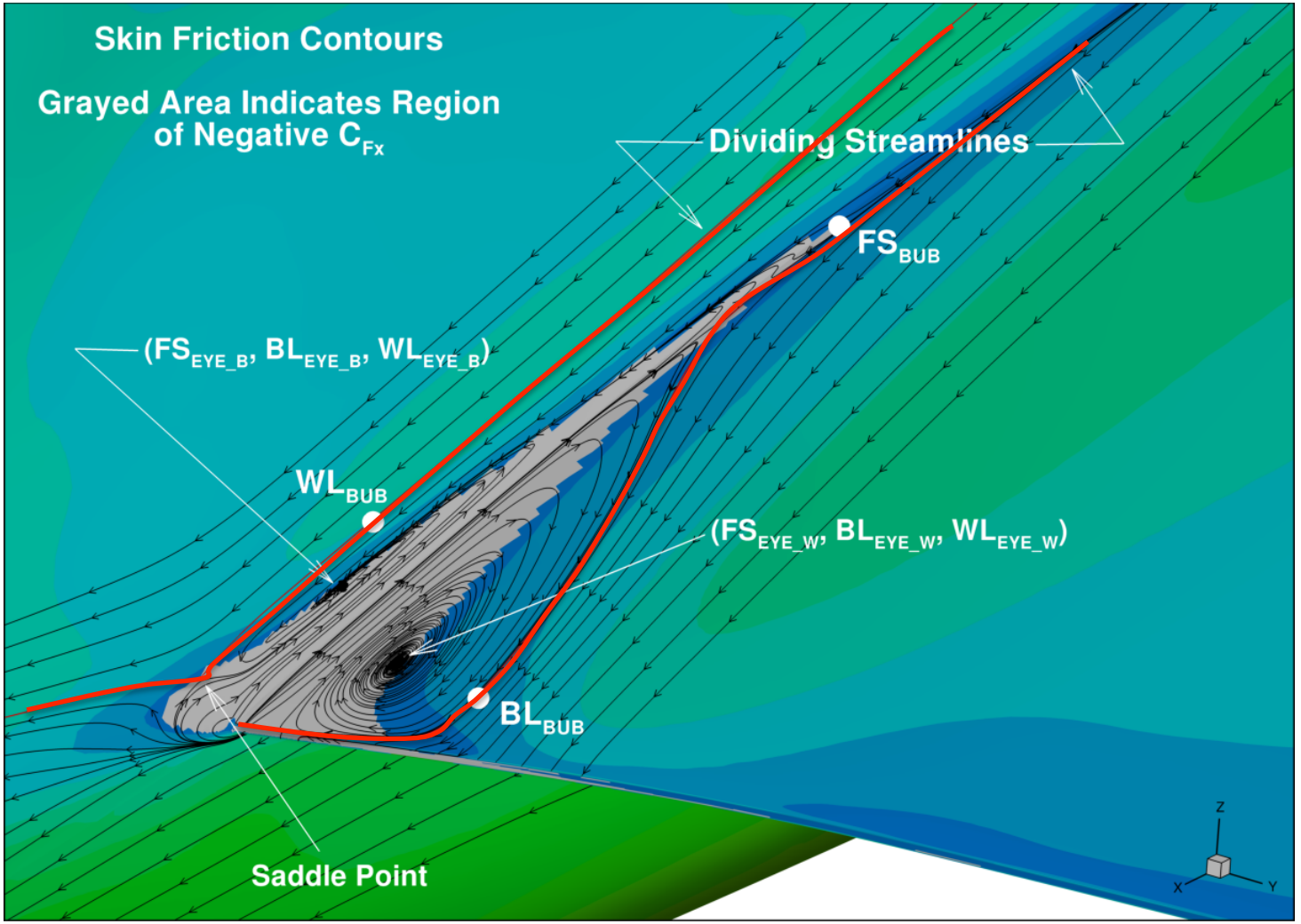
Side-of-Body & Trailing Edge Separations



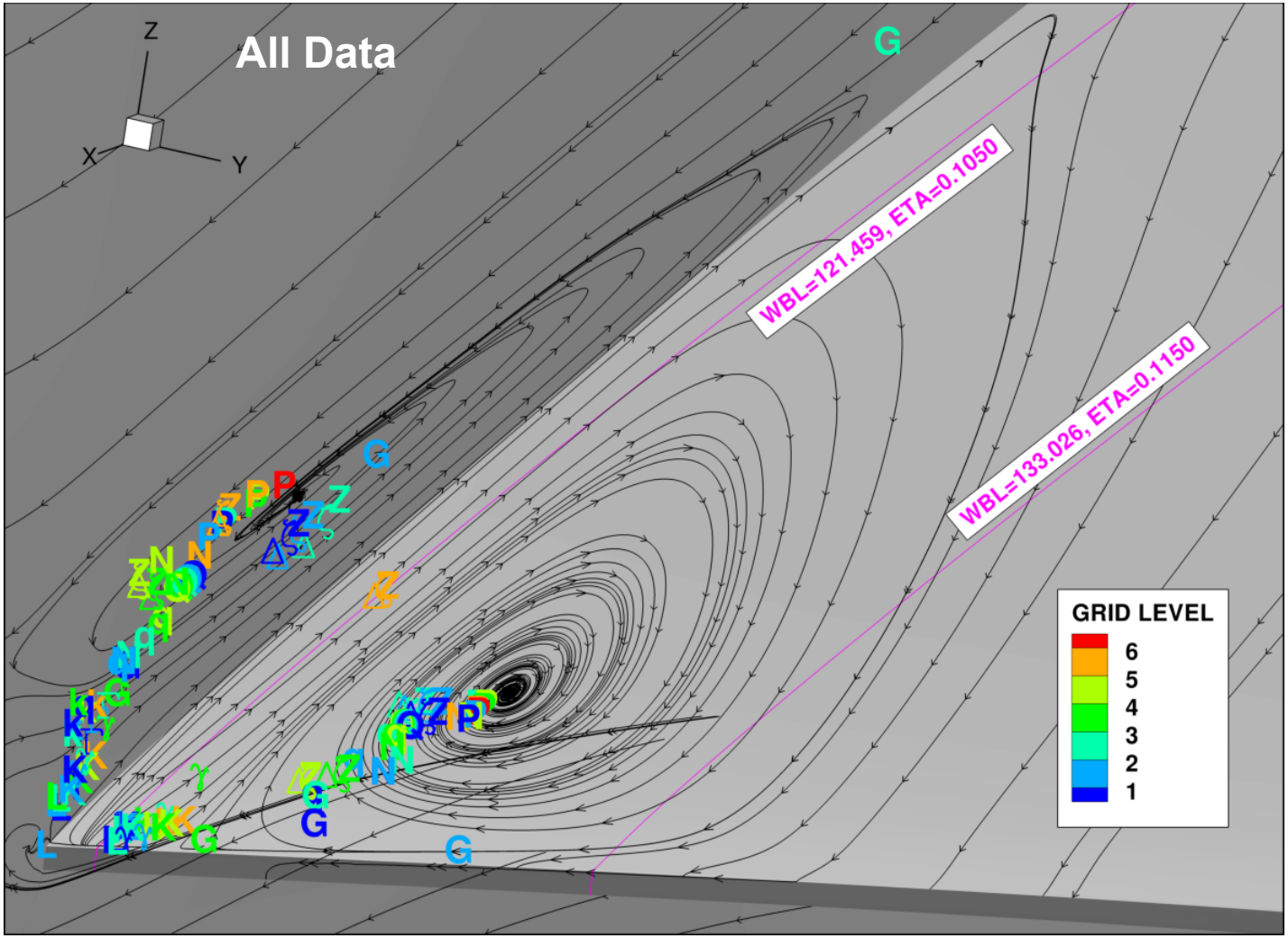
DPW-6 Organizing Committee

K. Laflin, O. Brodersen

Separation Bubble



CASE 2A: WB Grid Refinement – Eye Locations



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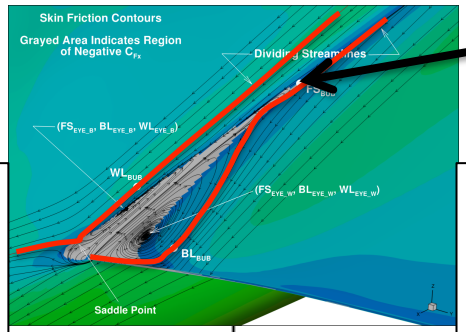
CASE 2A: WB Grid Refinement



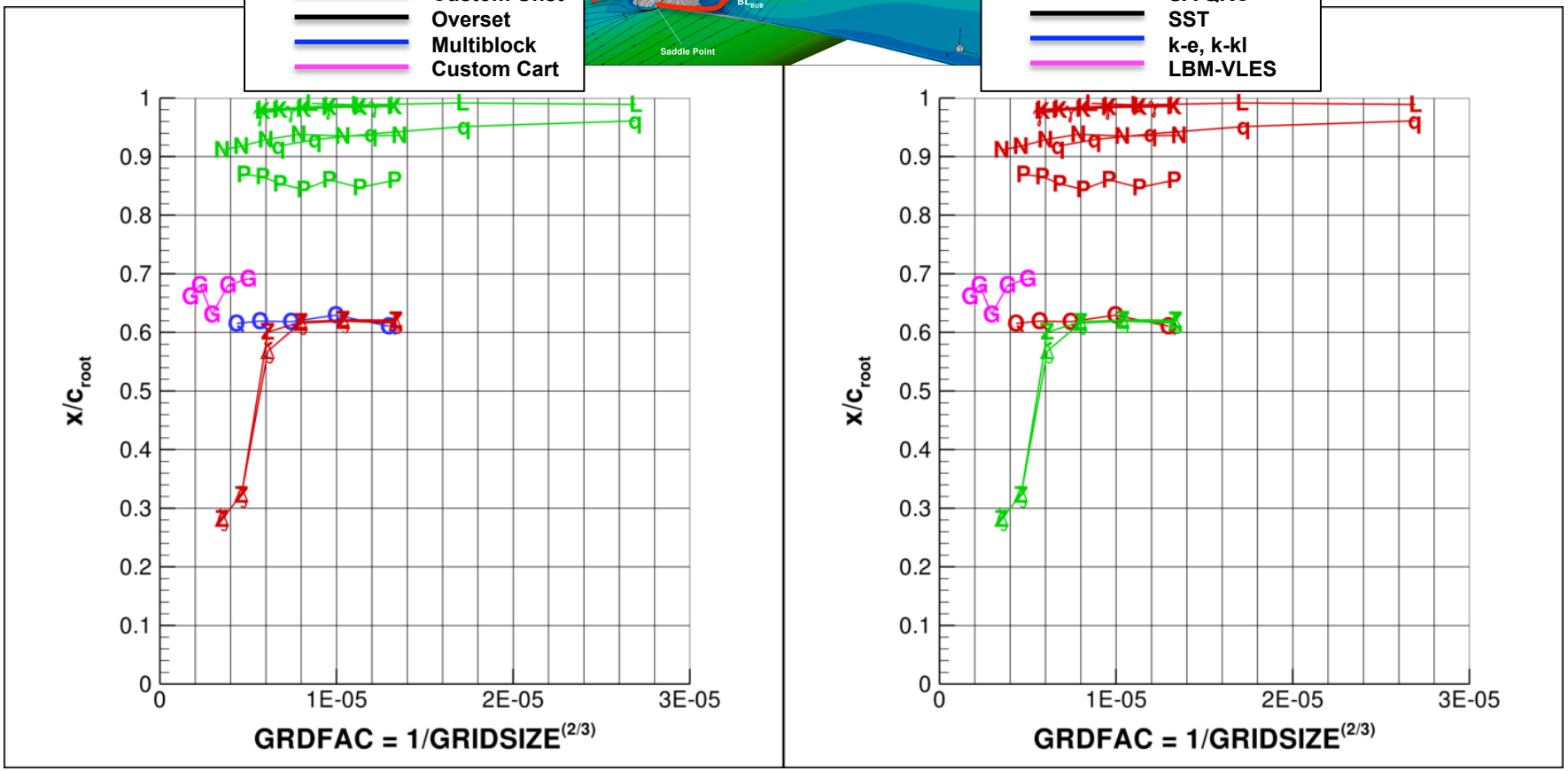
Bubble Leading Edge

Grid Type

Grid Type
- Unstructured
- Custom Unst
- Overset
- Multiblock
- Custom Cart

Turbulence Model

Turbulence Model
- SA
- SA QRC
- SST
- k-e, k-kl
- LBM-VLES



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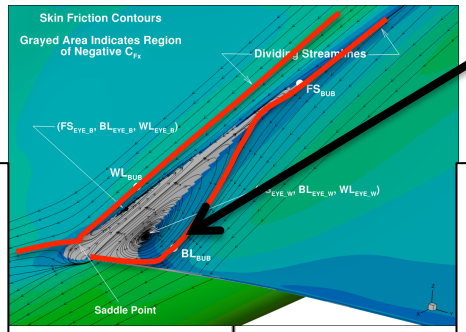
CASE 2A: WB Grid Refinement



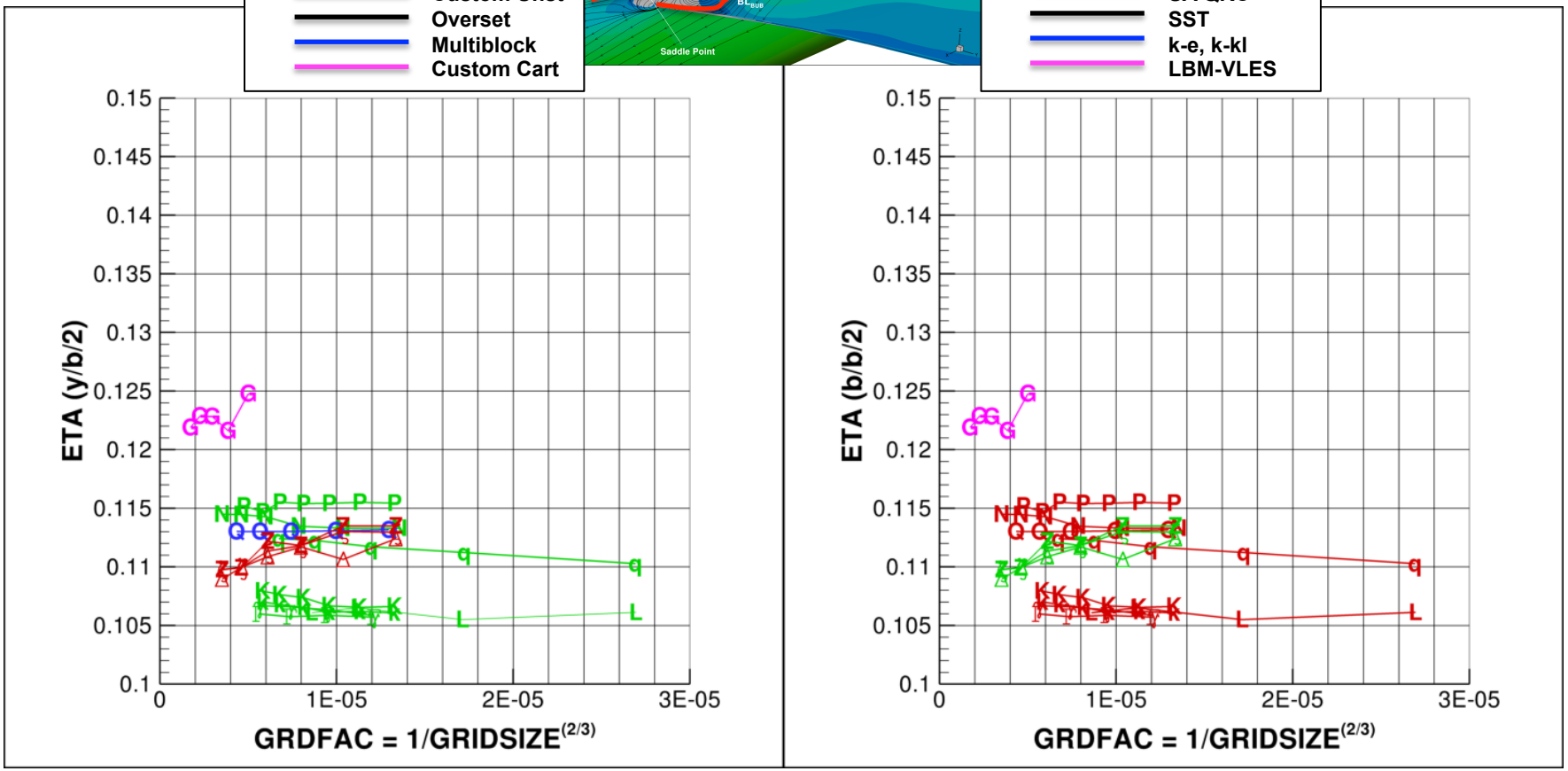
Bubble Width (wing)

Grid Type

Grid Type
- Unstructured
- Custom Unst
- Overset
- Multiblock
- Custom Cart

Turbulence Model

Turbulence Model
- SA
- SA QRC
- SST
- k-e, k-kl
- LBM-VLES



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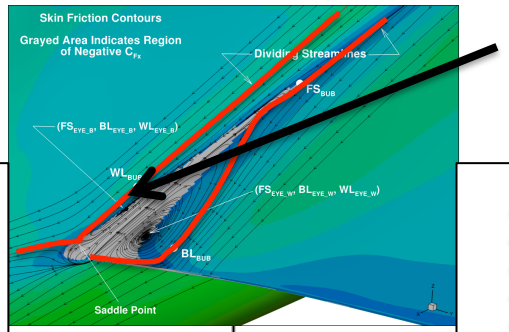
CASE 2A: WB Grid Refinement



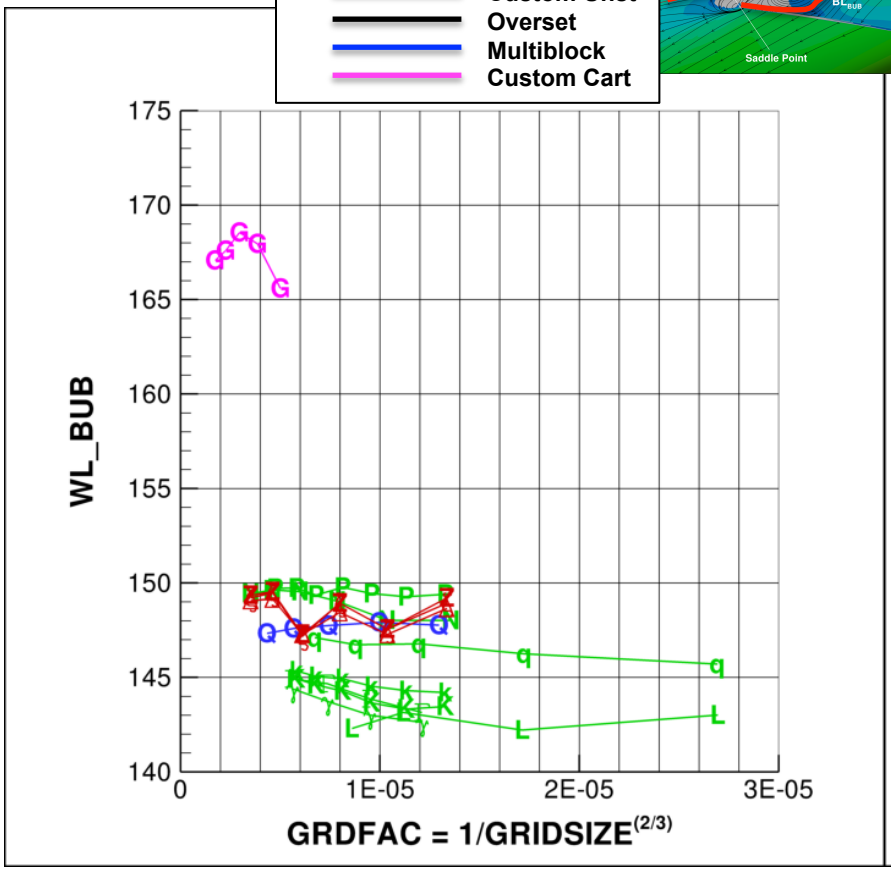
Bubble Height (fuselage)

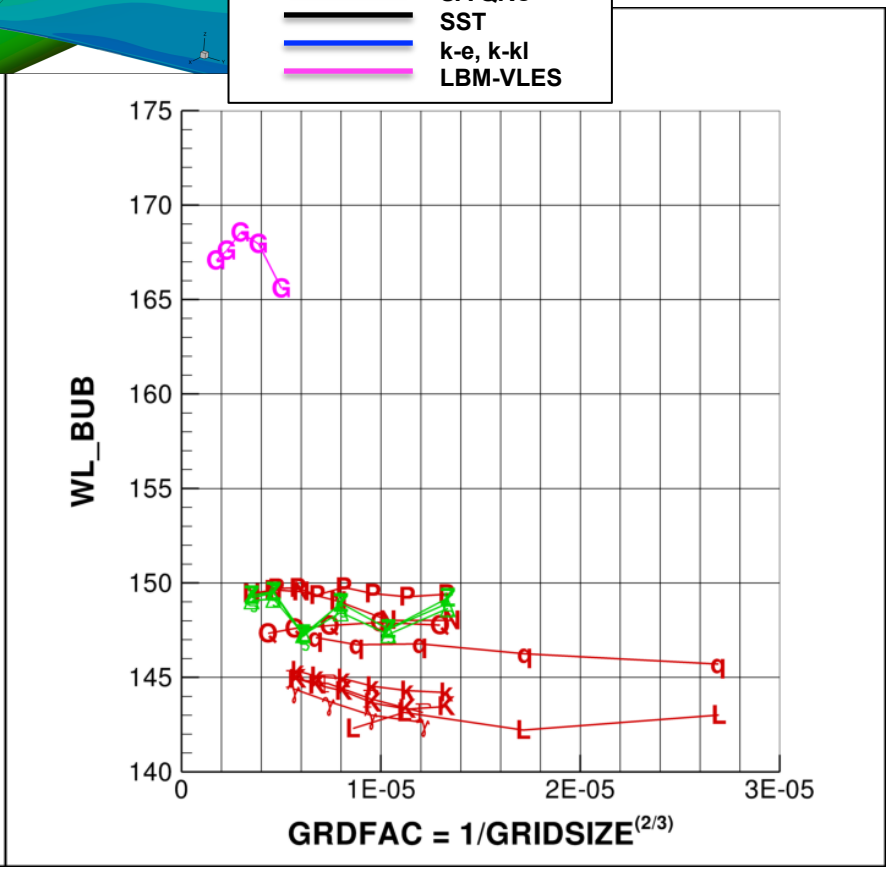
Grid Type

Grid Type
Unstructured
Custom Unst
Overset
Multiblock
Custom Cart

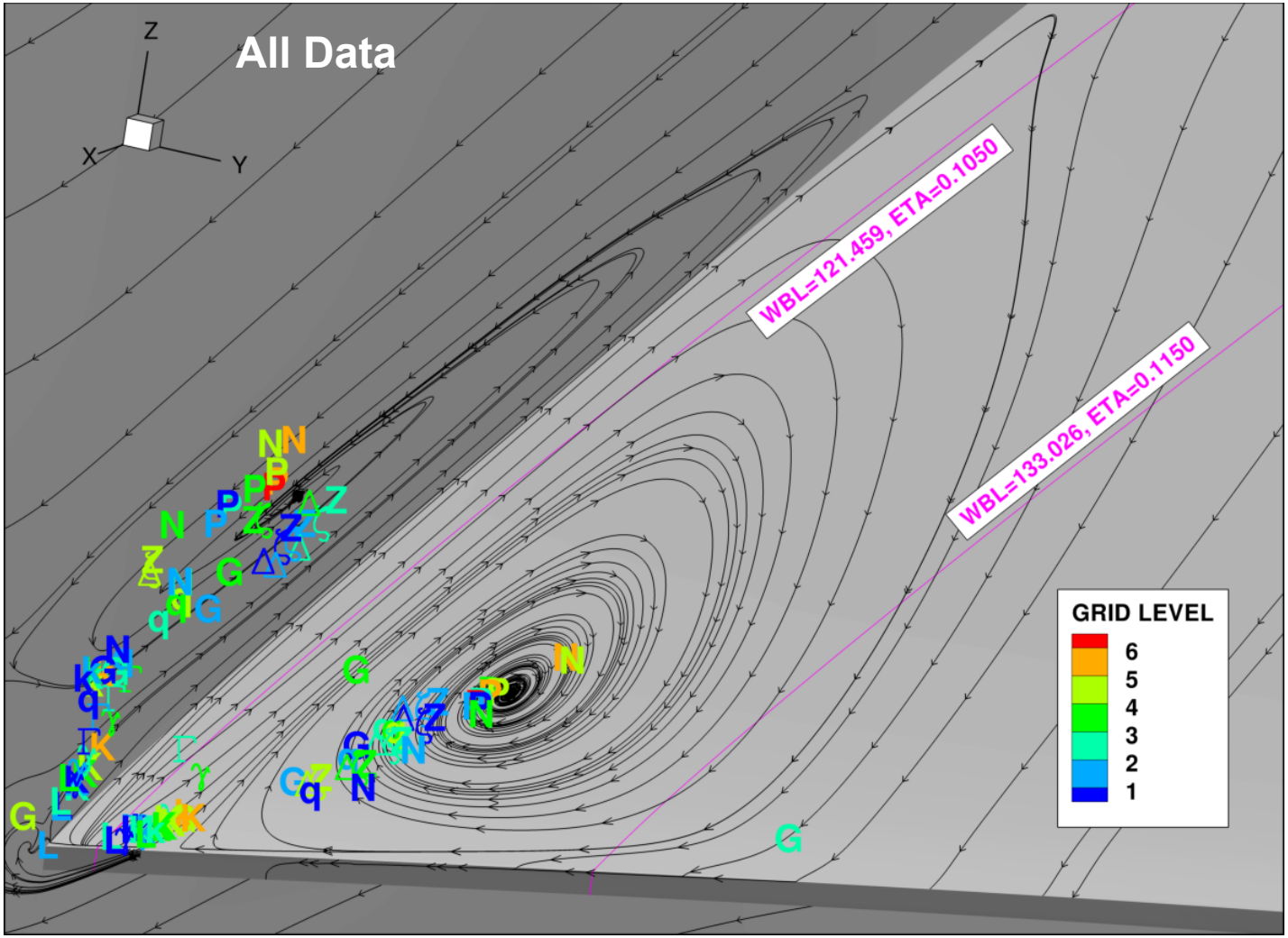
Turbulence Model

Turbulence Model
SA
SA QRC
SST
k-e, k-kl
LBM-VLES





CASE 2B: WBNP Grid Refinement – Eye Locations



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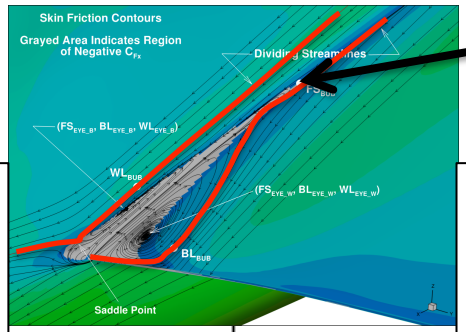
CASE 2B: WBNP Grid Refinement



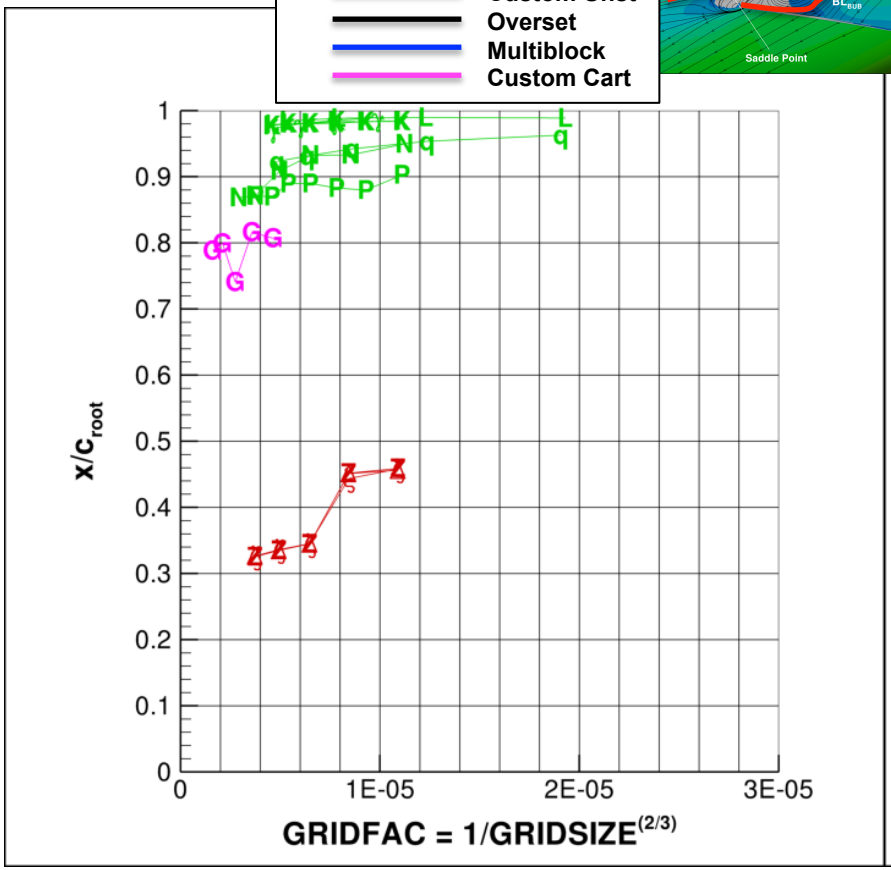
Bubble Leading Edge

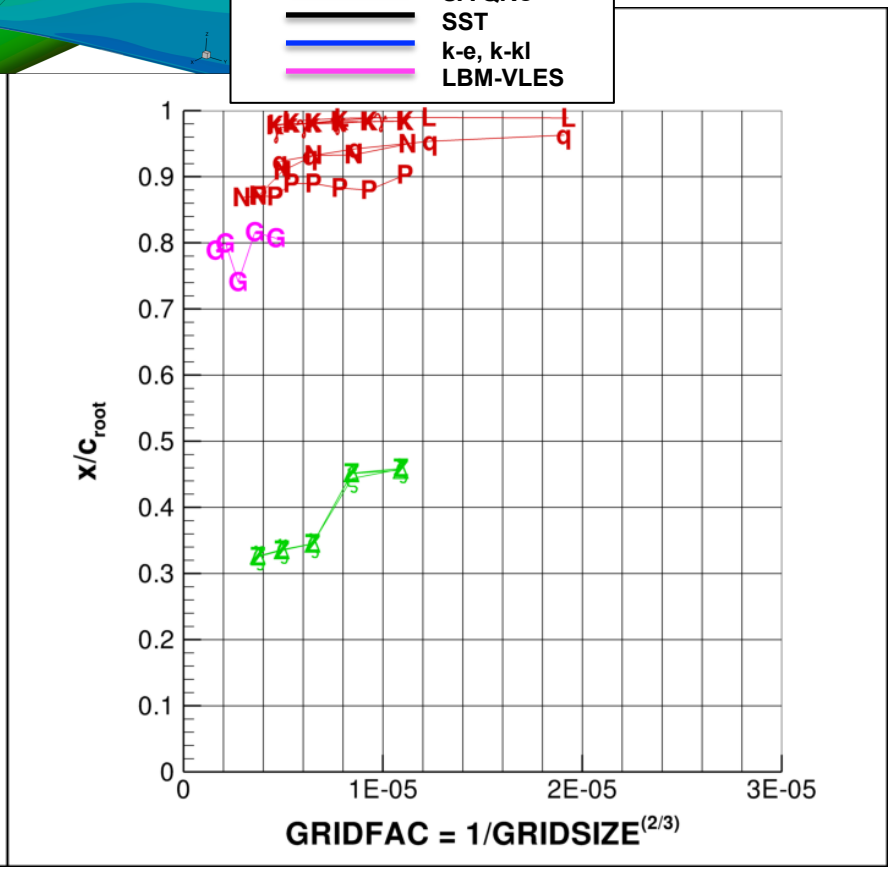
Grid Type

Grid Type
Unstructured
Custom Unst
Overset
Multiblock
Custom Cart

Turbulence Model

Turbulence Model
SA
SA QRC
SST
k-e, k-kl
LBM-VLES





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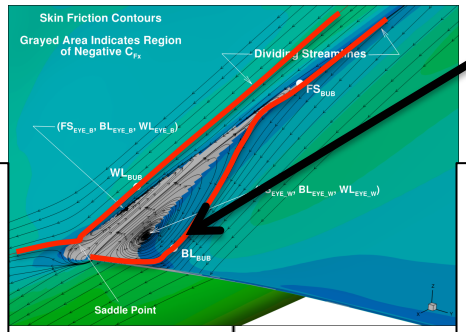
CASE 2B: WBNP Grid Refinement



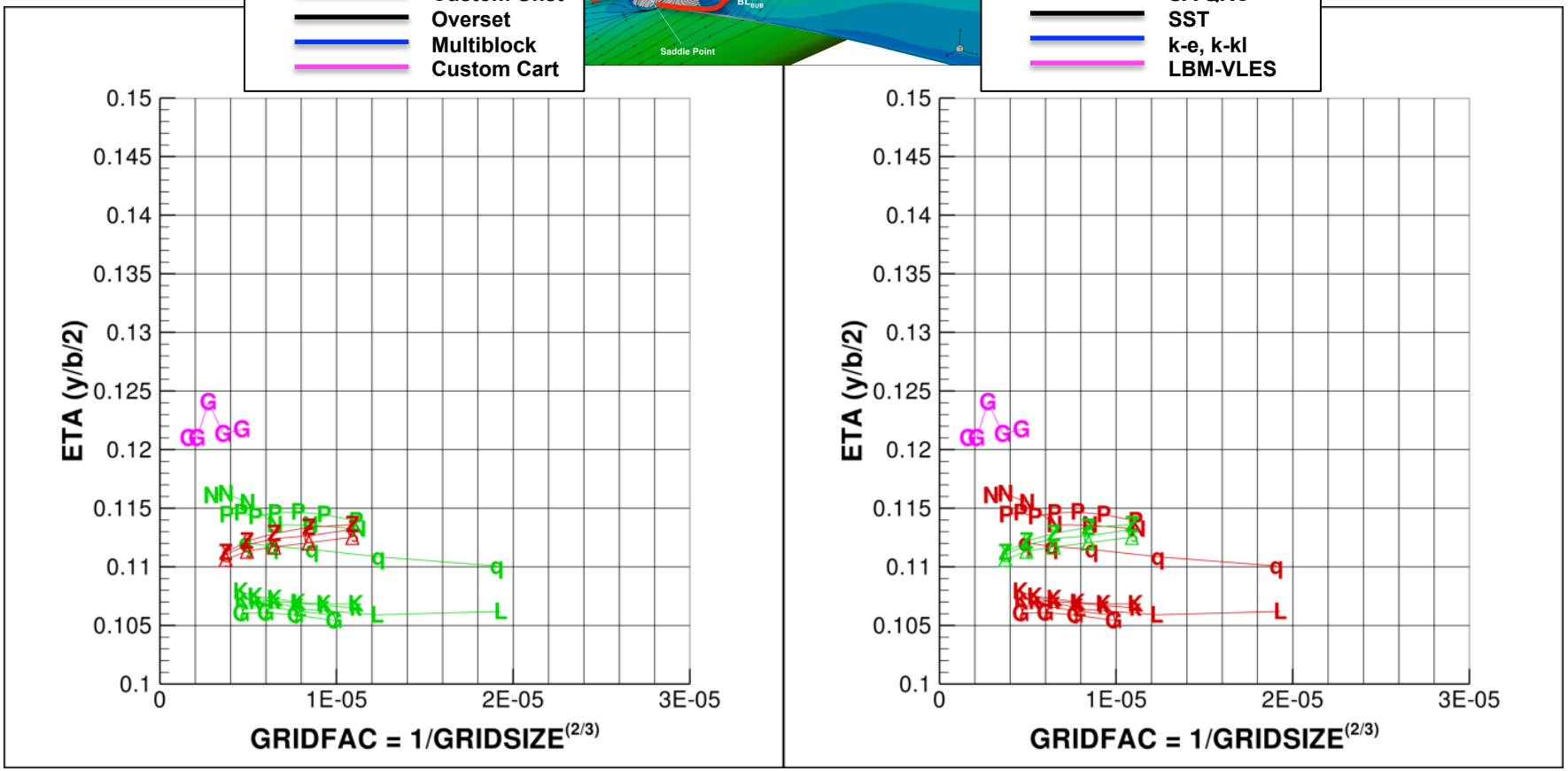
Bubble Width (wing)

Grid Type

Grid Type
Unstructured
Custom Unst
Overset
Multiblock
Custom Cart

Turbulence Model

Turbulence Model
SA
SA QRC
SST
k-e, k-kl
LBM-VLES



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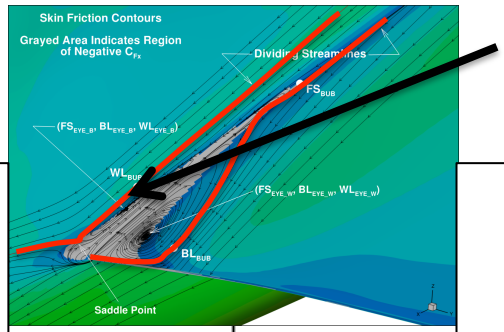
CASE 2B: WBNP Grid Refinement



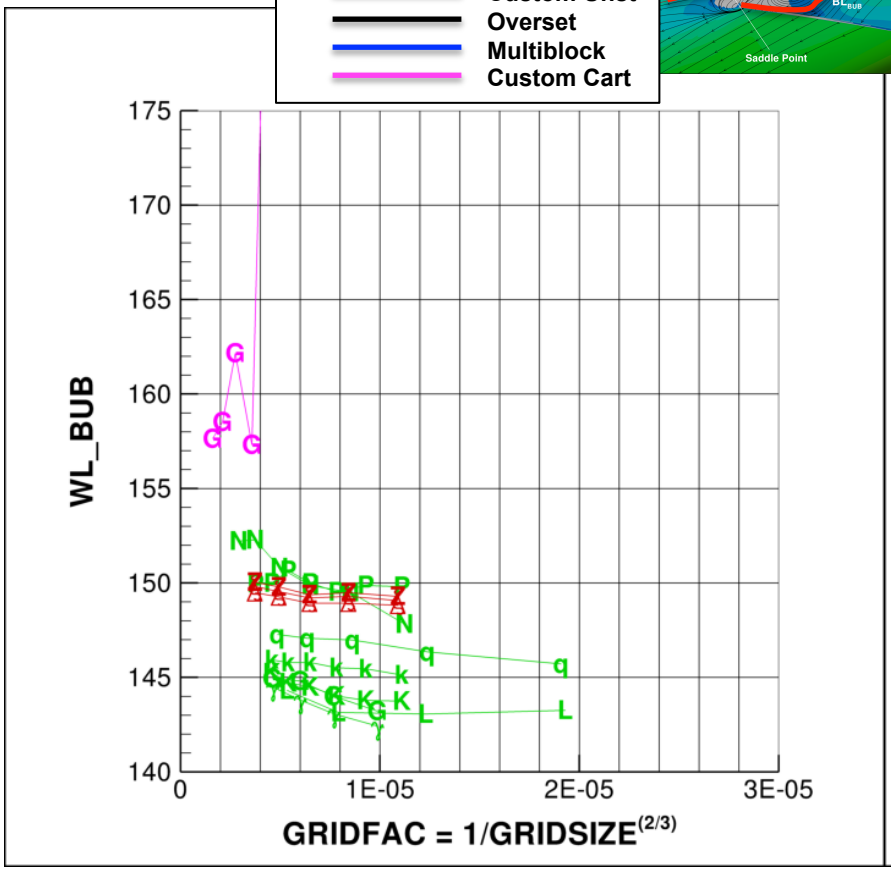
Bubble Height (fuselage)

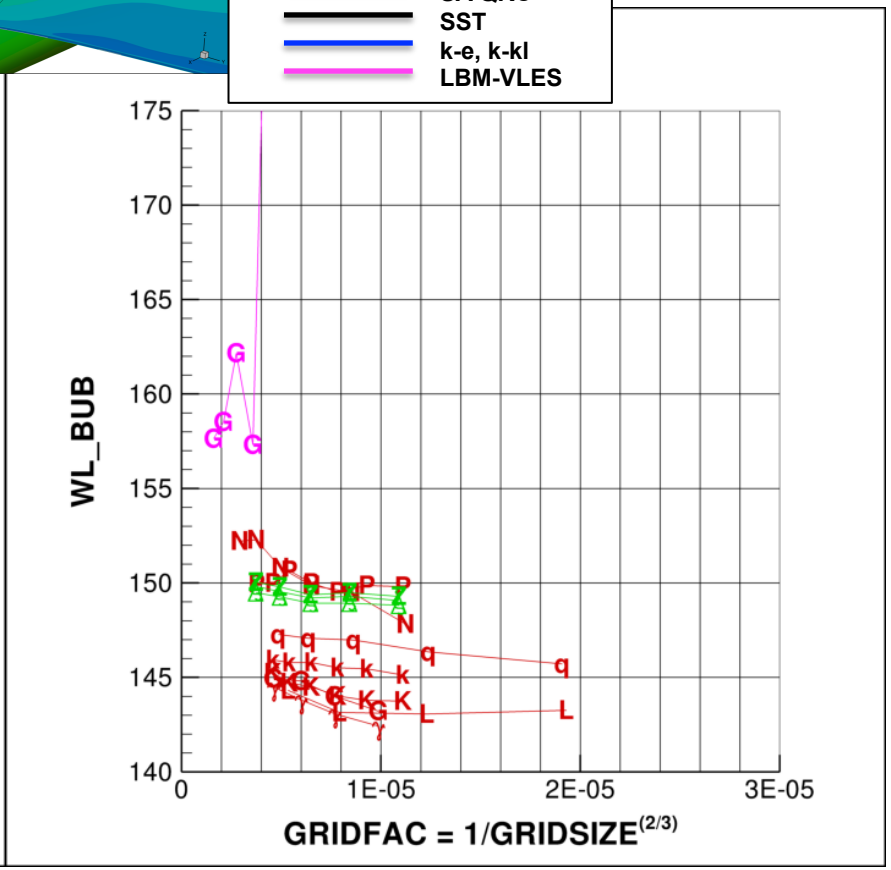
Grid Type

Grid Type
Unstructured
Custom Unst
Overset
Multiblock
Custom Cart

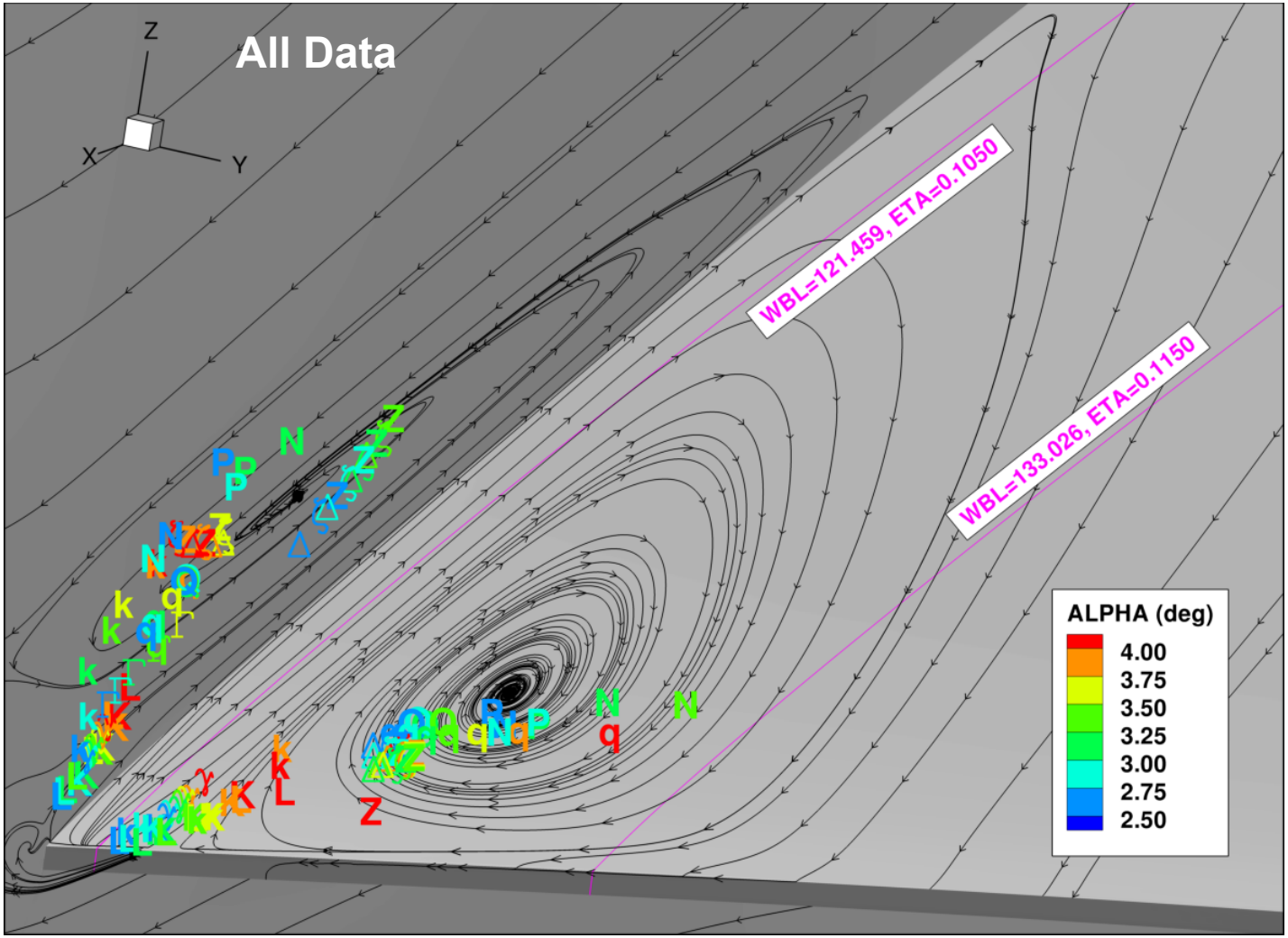
Turbulence Model

Turbulence Model
SA
SA QRC
SST
k-e, k-kl
LBM-VLES

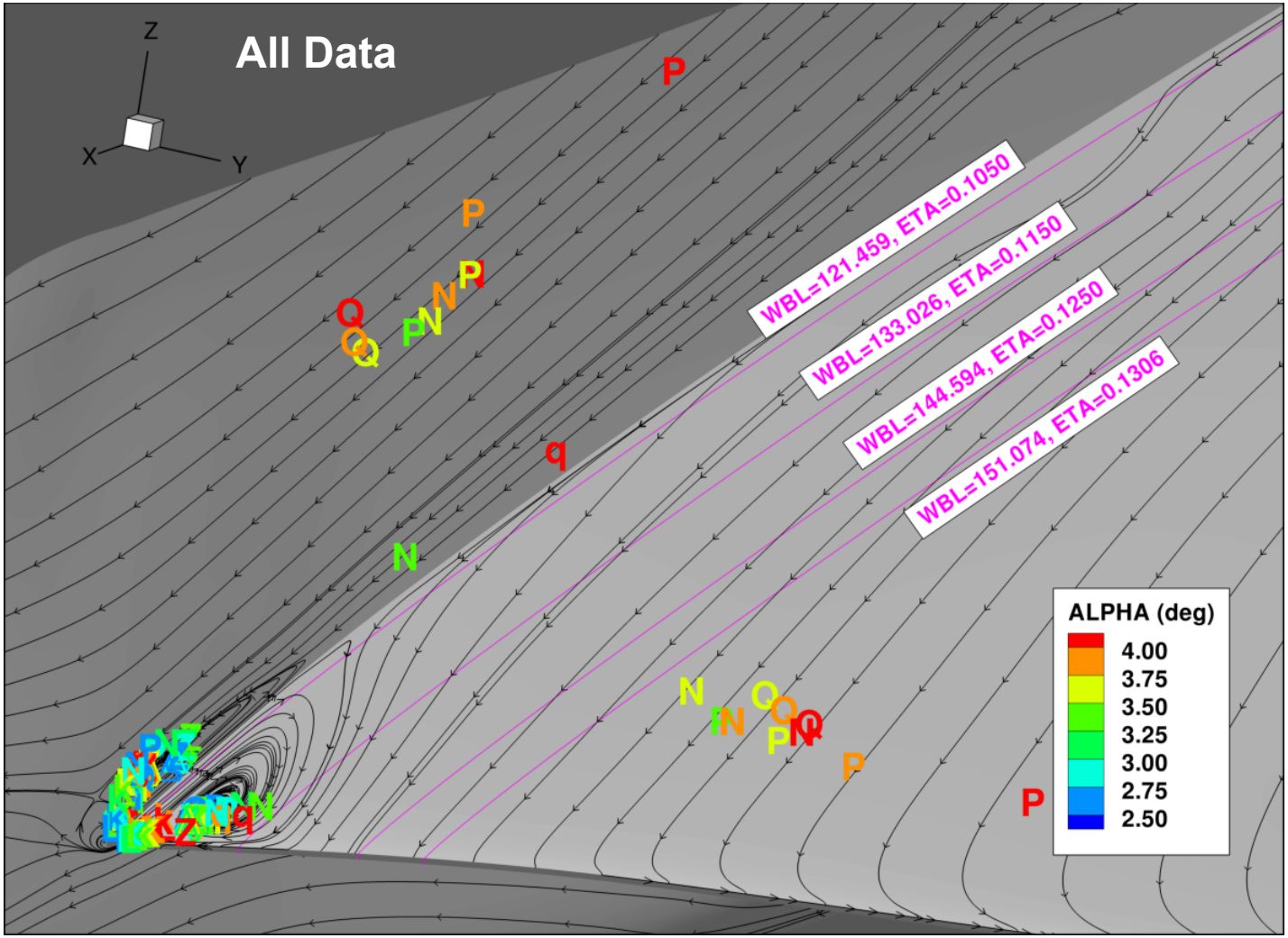




CASE 3: WB Alpha Sweep – Eye Locations

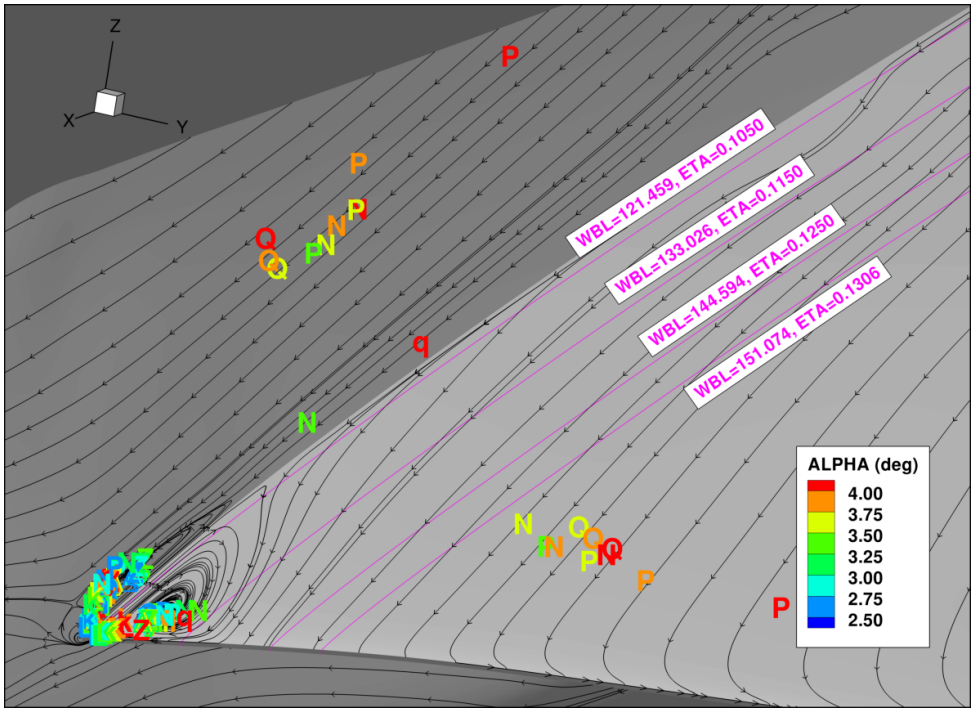


CASE 3: WB Alpha Sweep – Eye Locations (zoomed out)

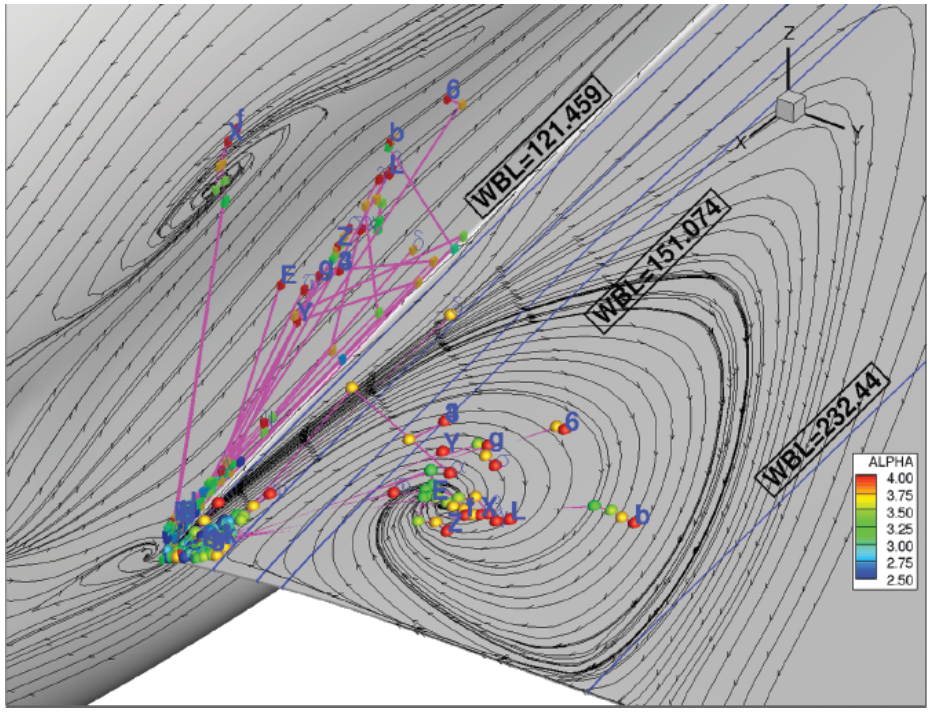


CASE 3: WB Alpha Sweep – Eye Locations (zoomed out)

DPW-6



DPW-5



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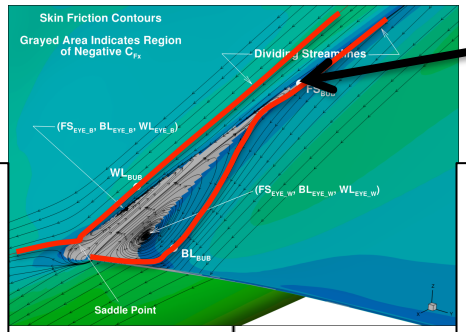
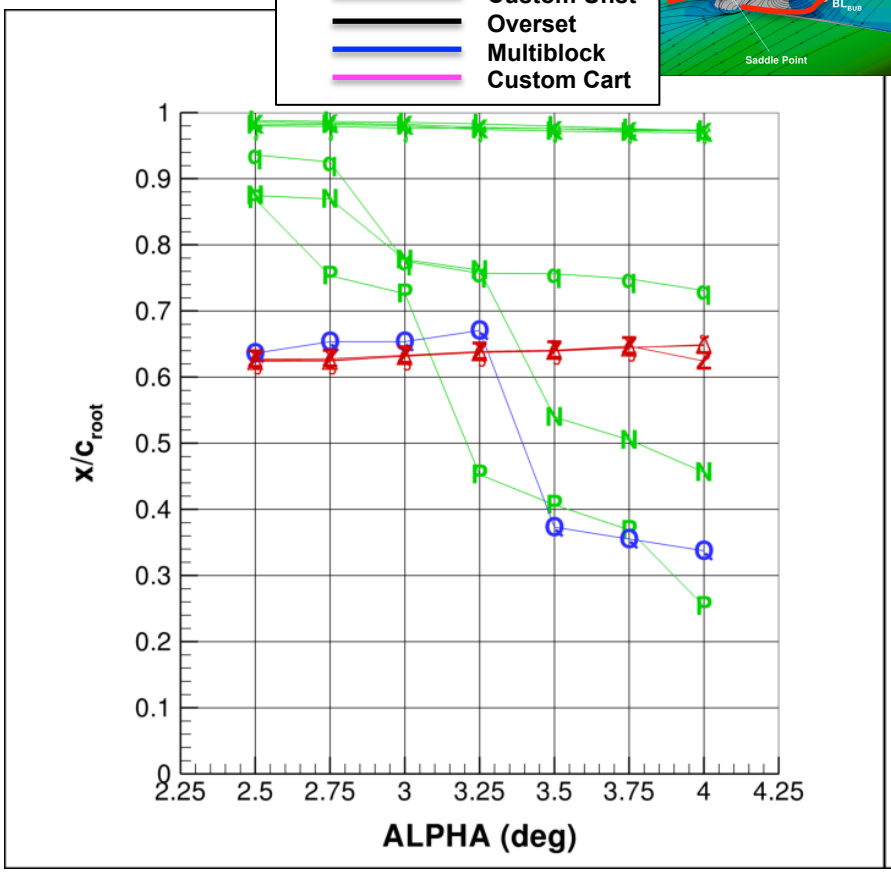
CASE 3: WB Alpha Sweep

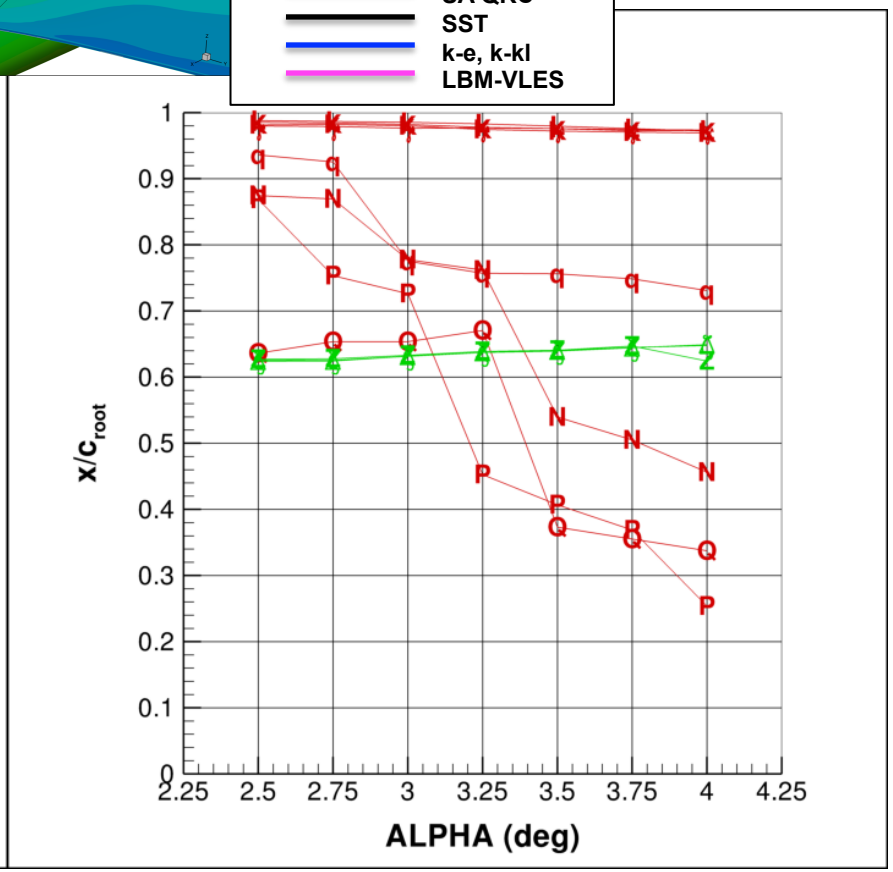


Bubble Leading Edge

Grid Type



Turbulence Model



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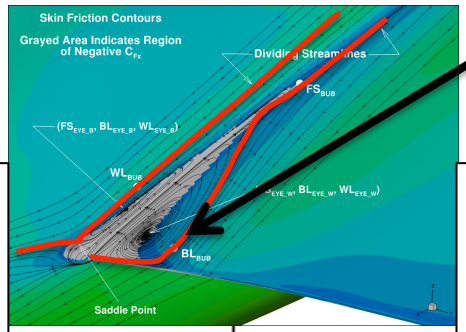
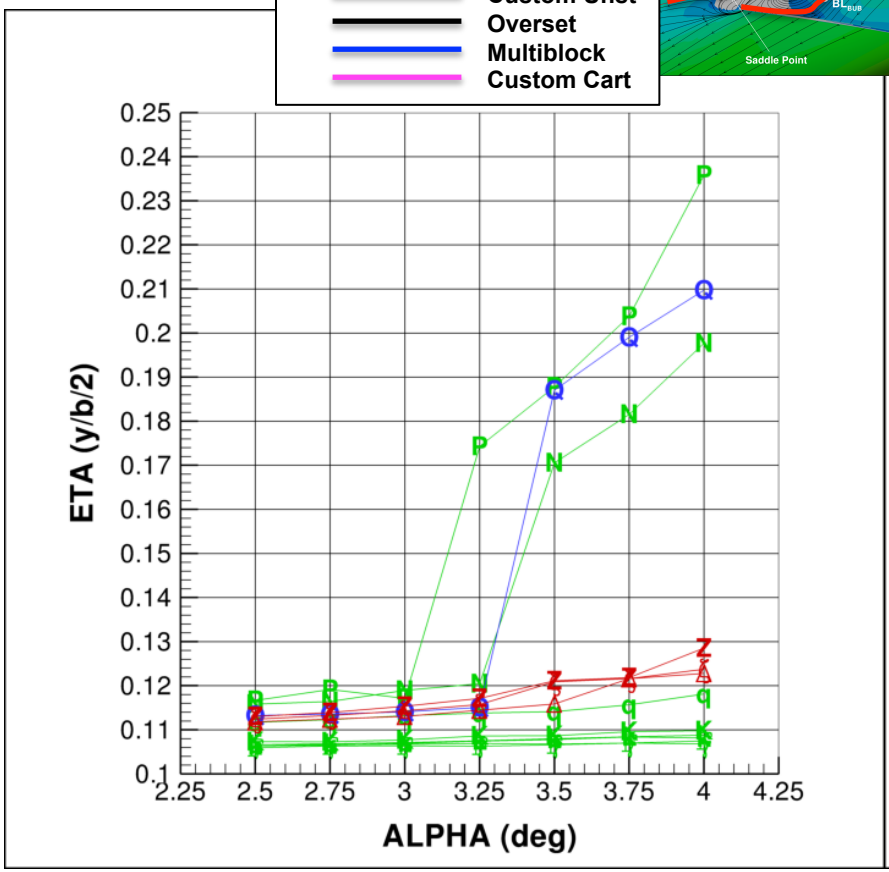
CASE 3: WB Alpha Sweep

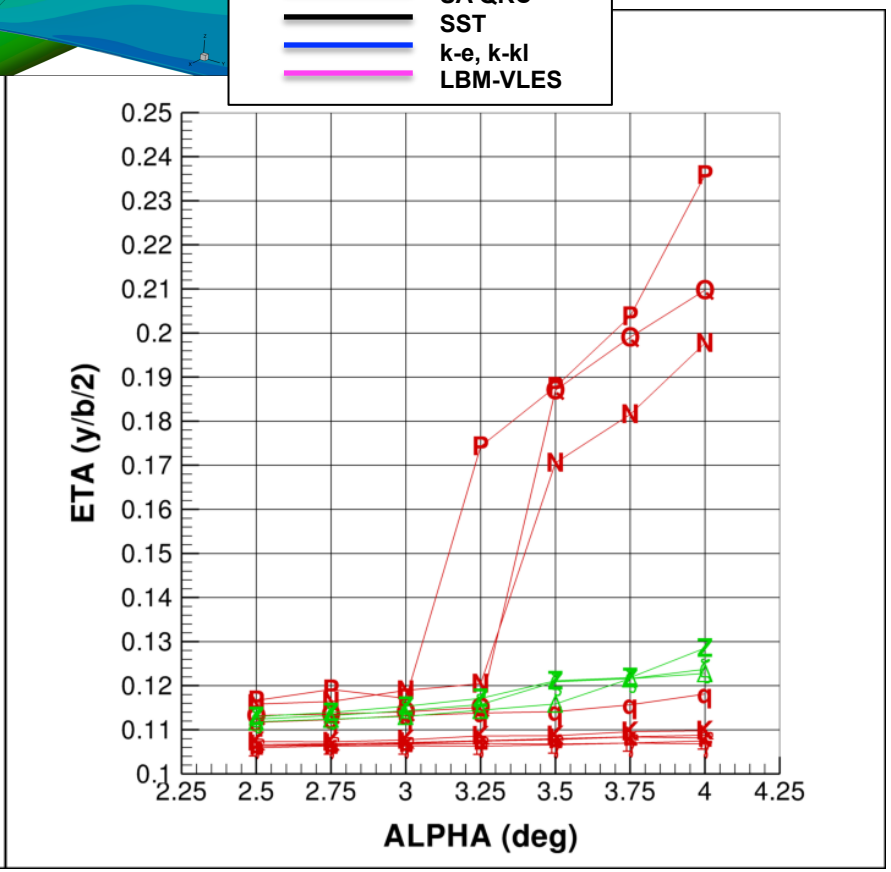


Bubble Width (wing)

Grid Type



Turbulence Model



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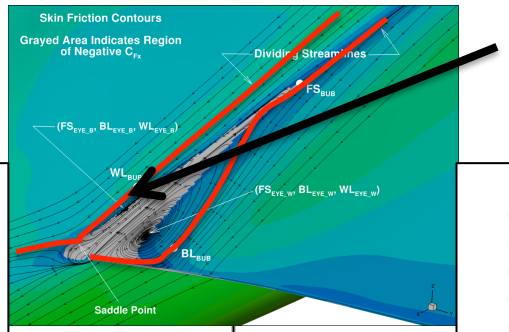
CASE 3: WB Alpha Sweep



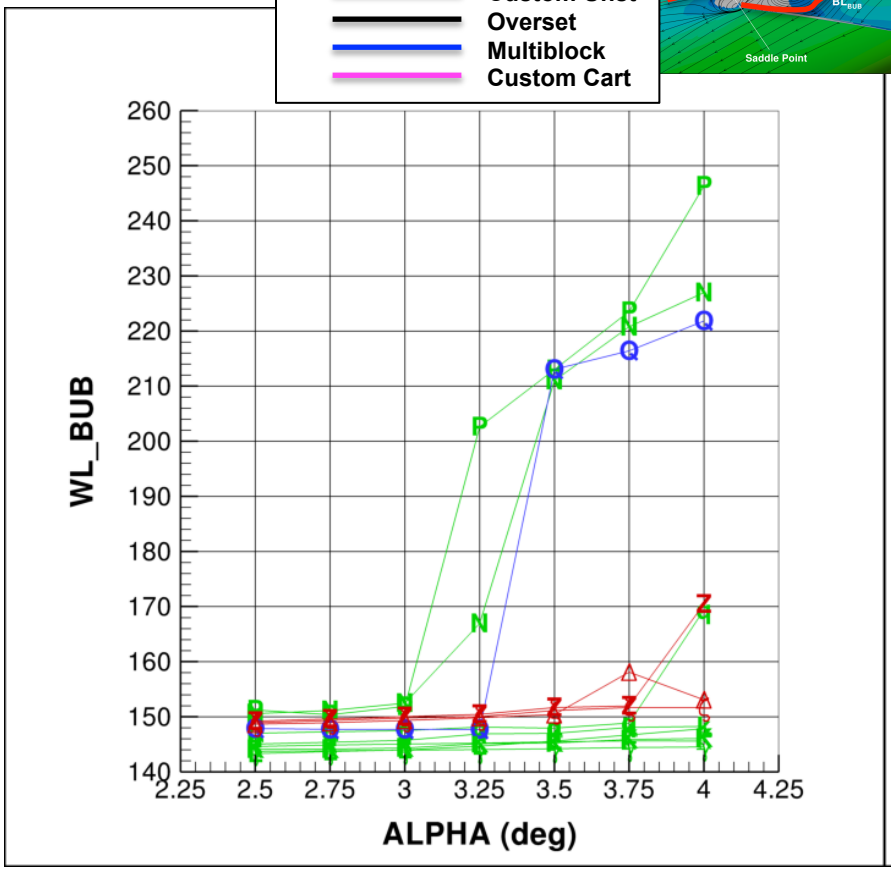
Bubble Height (fuselage)

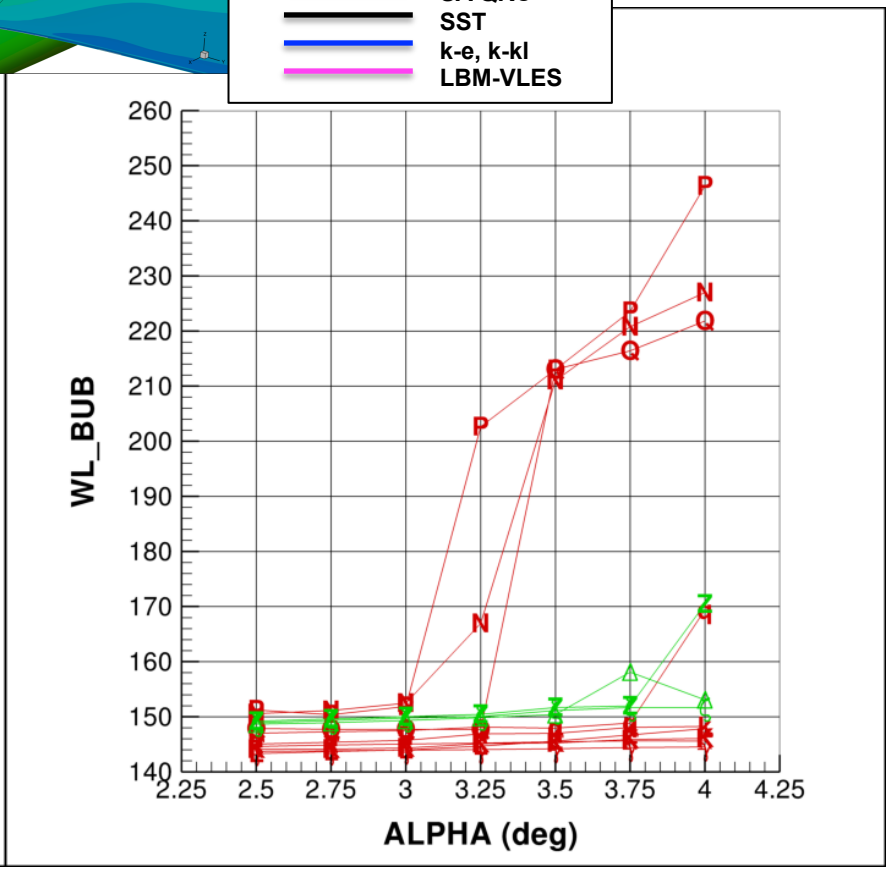
Grid Type

Grid Type
Unstructured
Custom Unst
Overset
Multiblock
Custom Cart

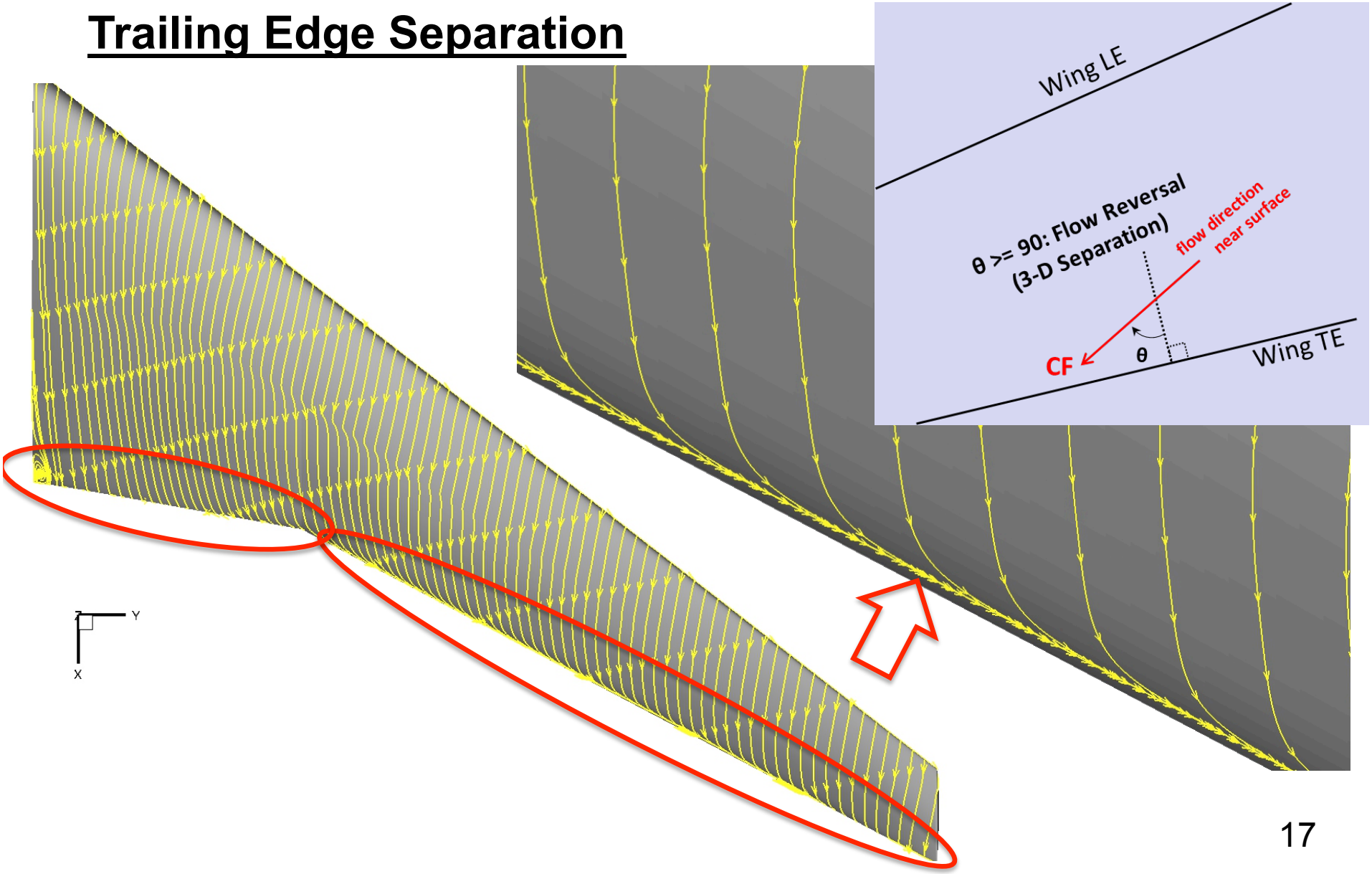
Turbulence Model

Turbulence Model
SA
SA QRC
SST
k-e, k-kl
LBM-VLES

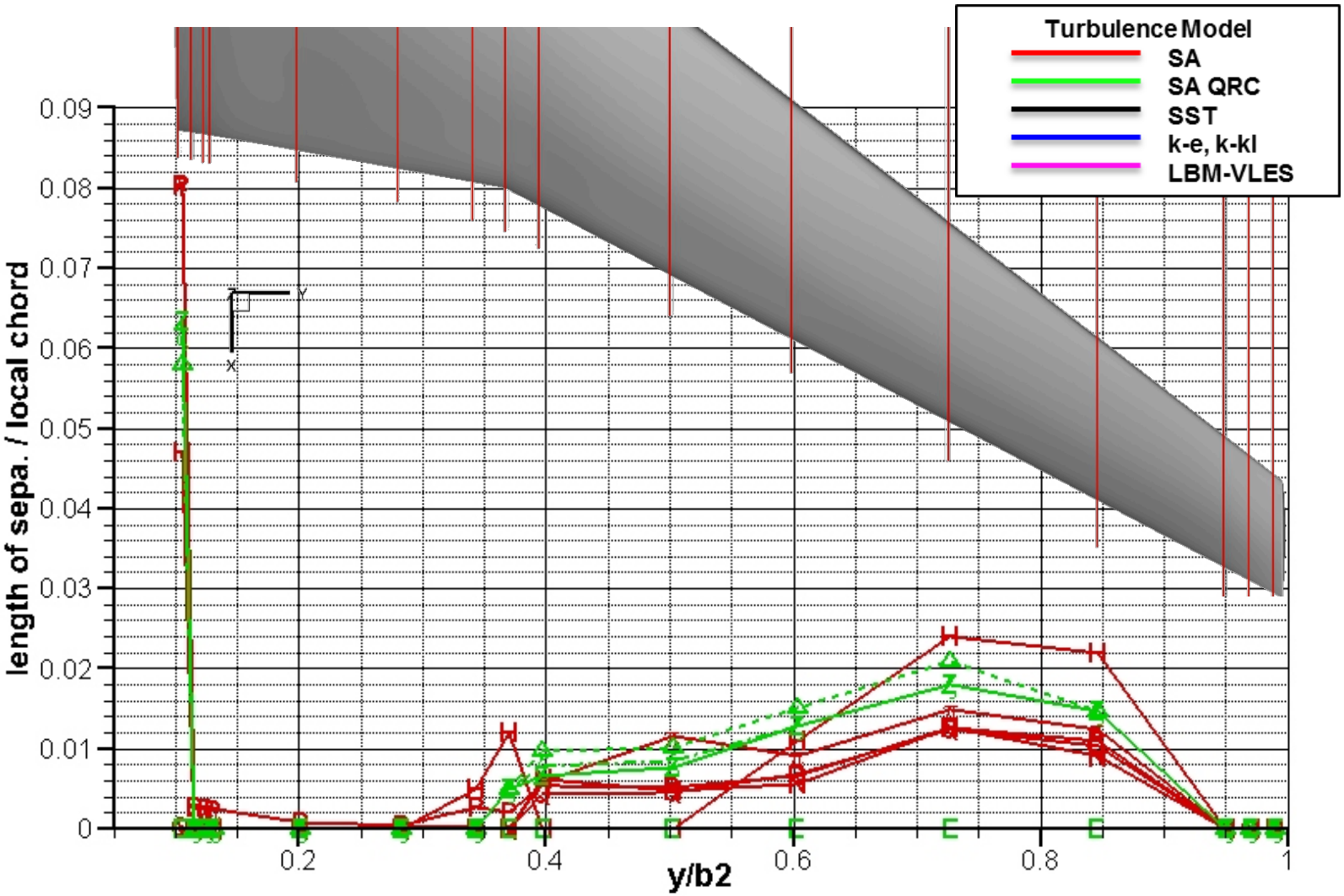




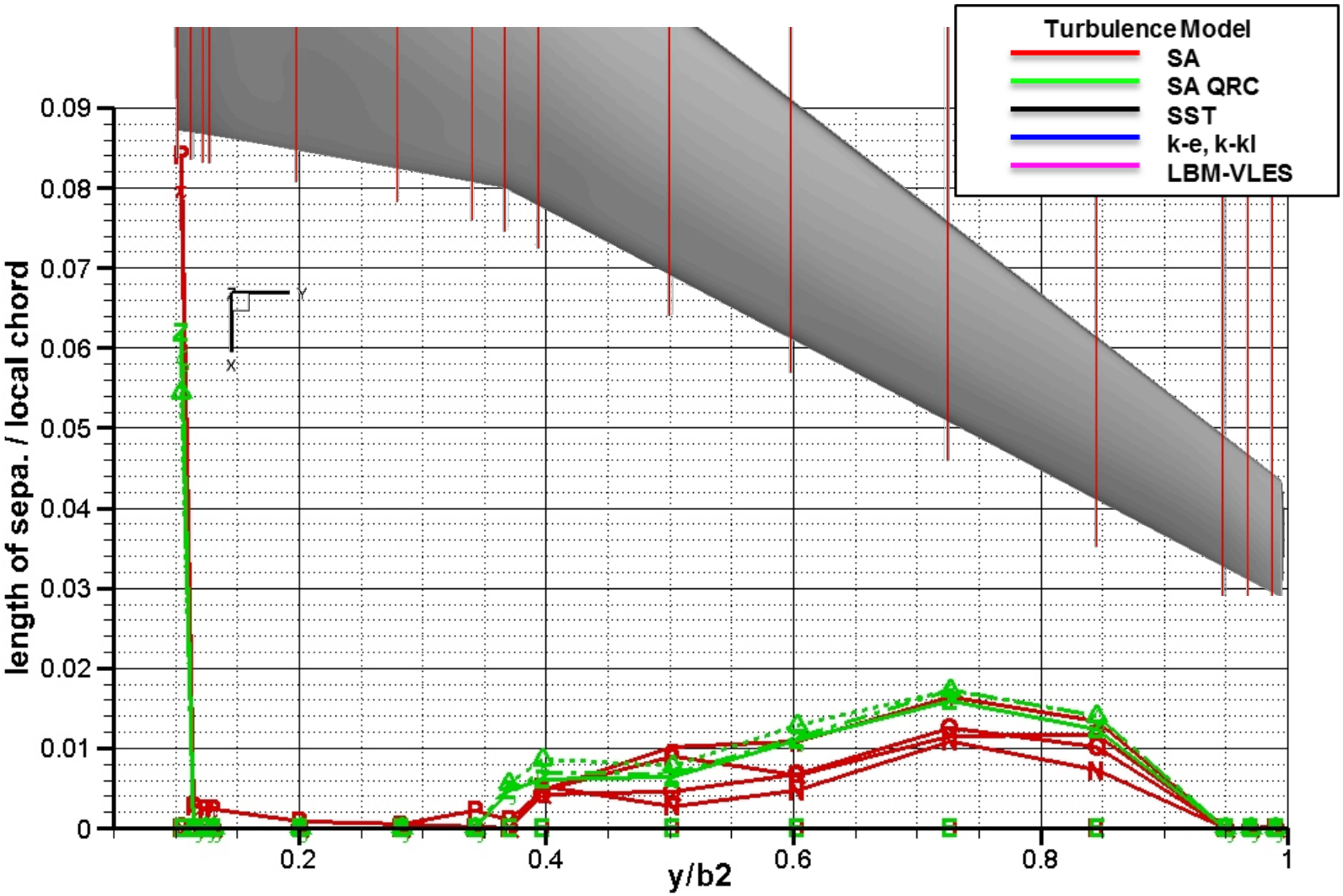
Trailing Edge Separation



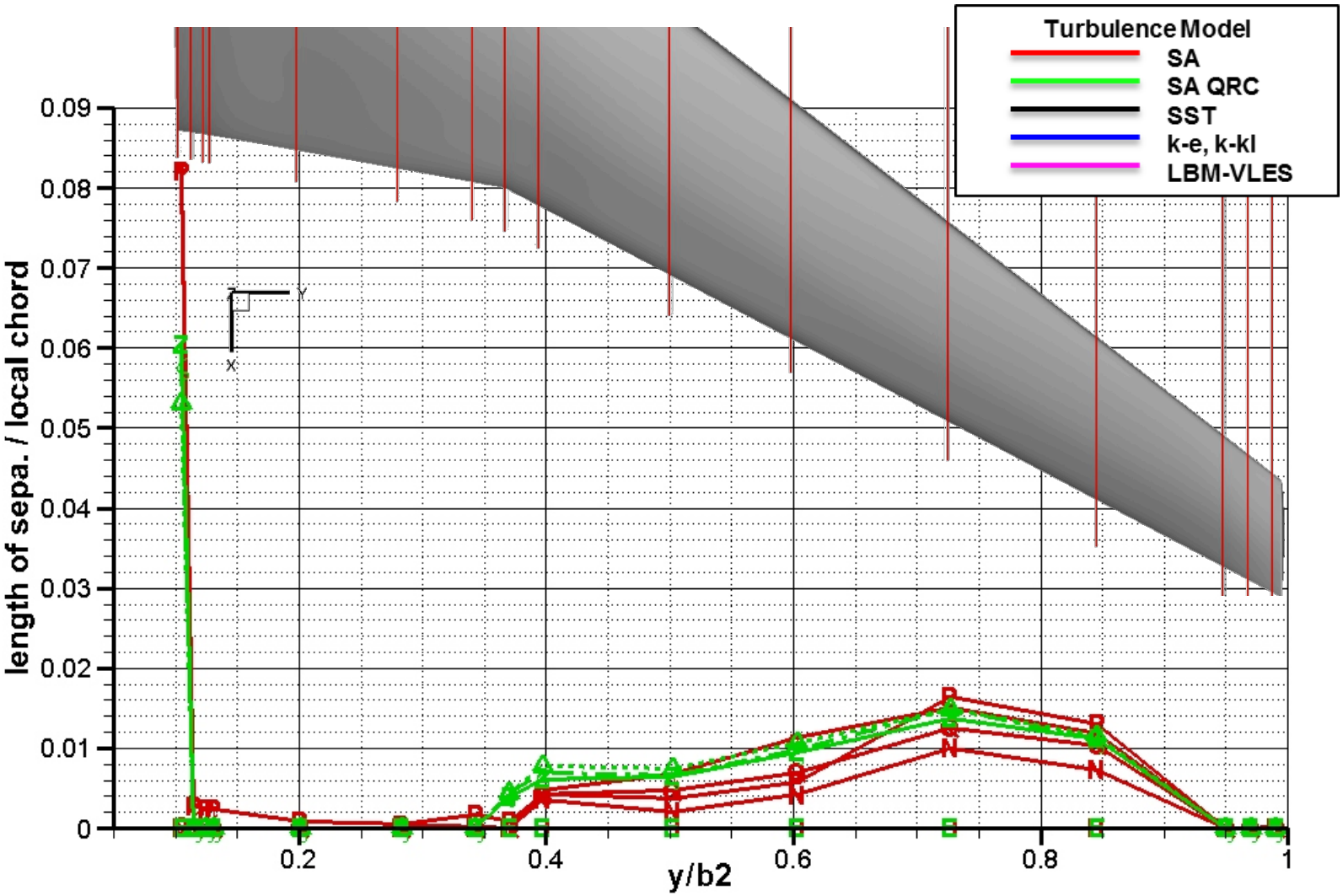
Case 2a (WB), Grid-1



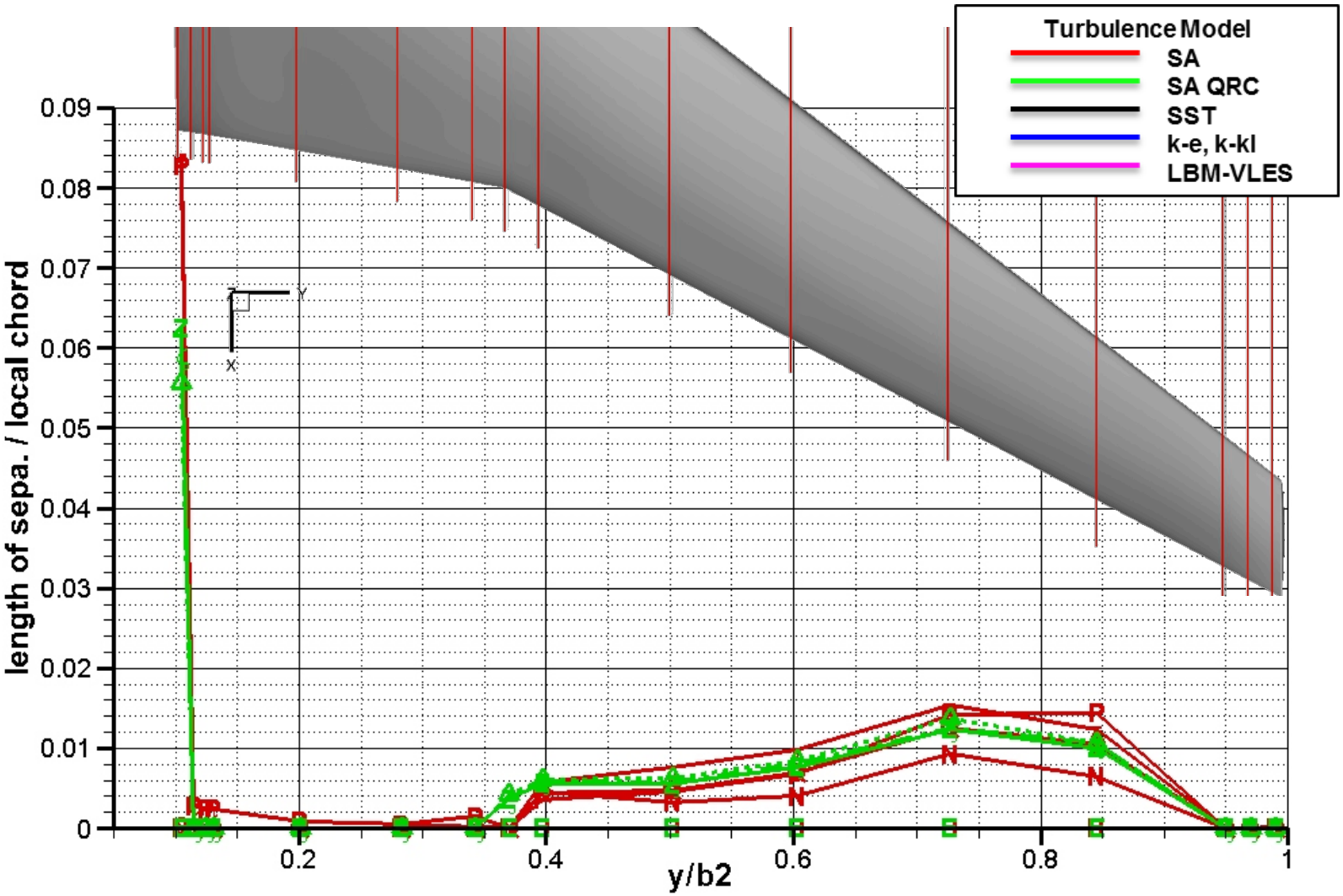
Case 2a (WB), Grid-2



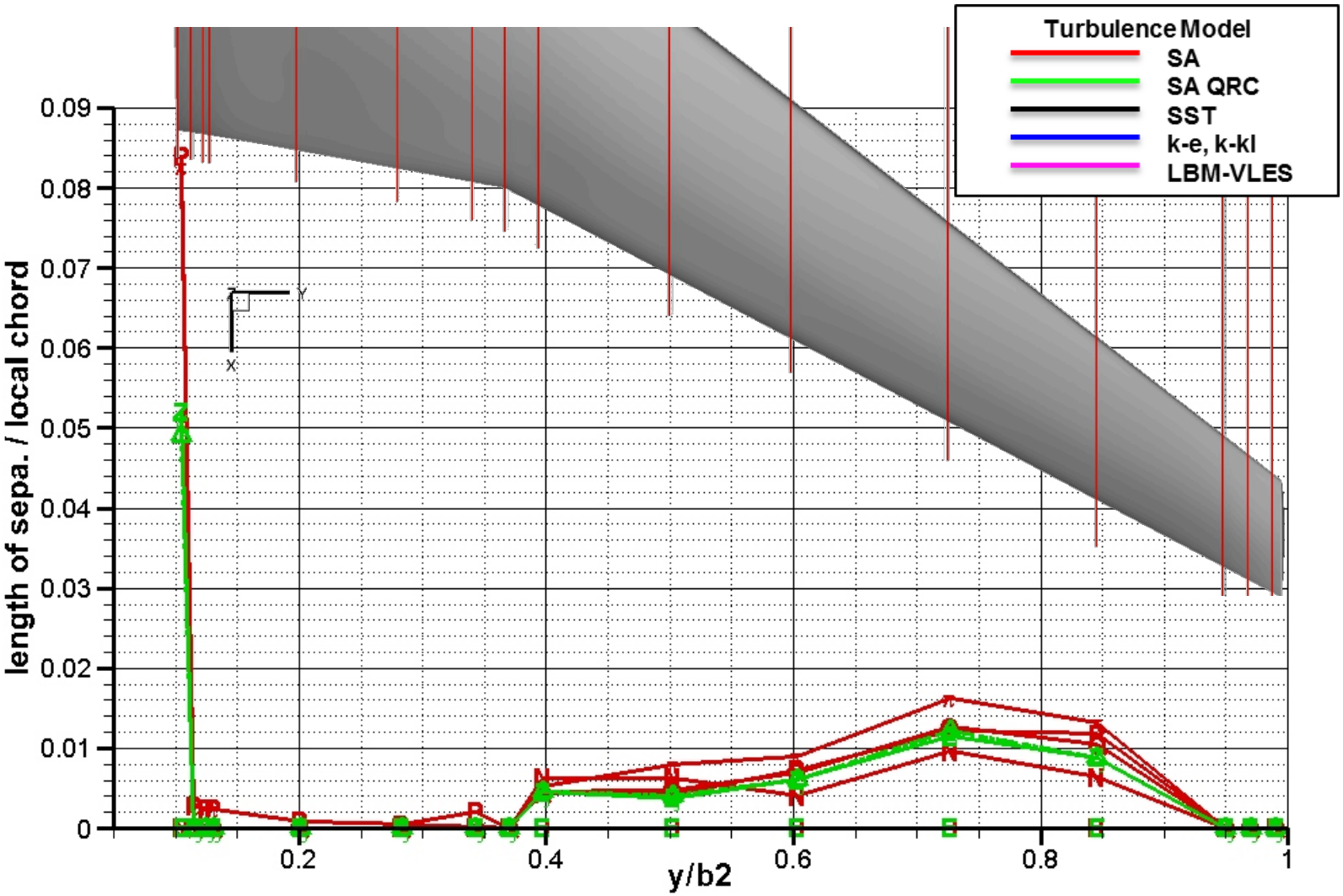
Case 2a (WB), Grid-3



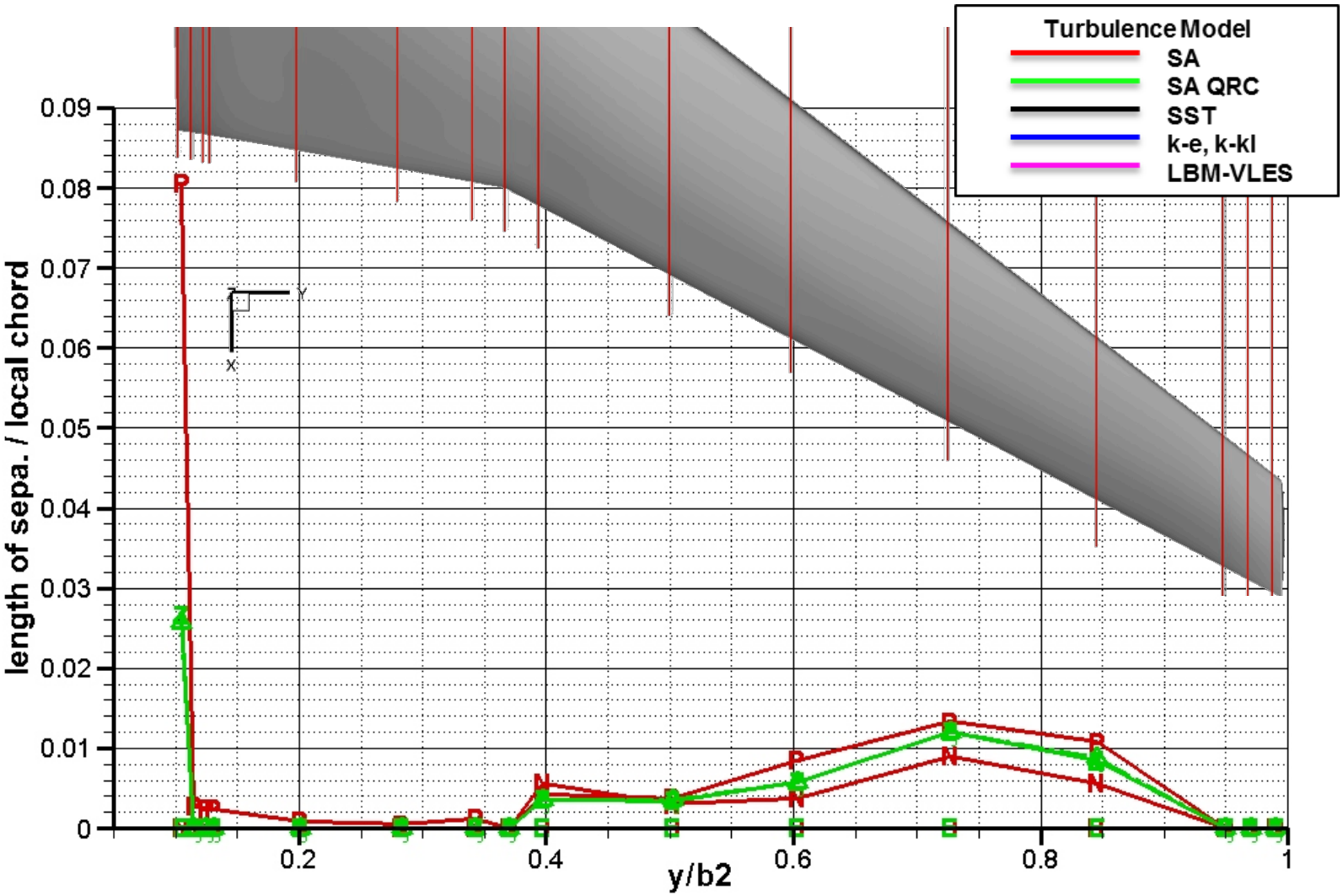
Case 2a (WB), Grid-4



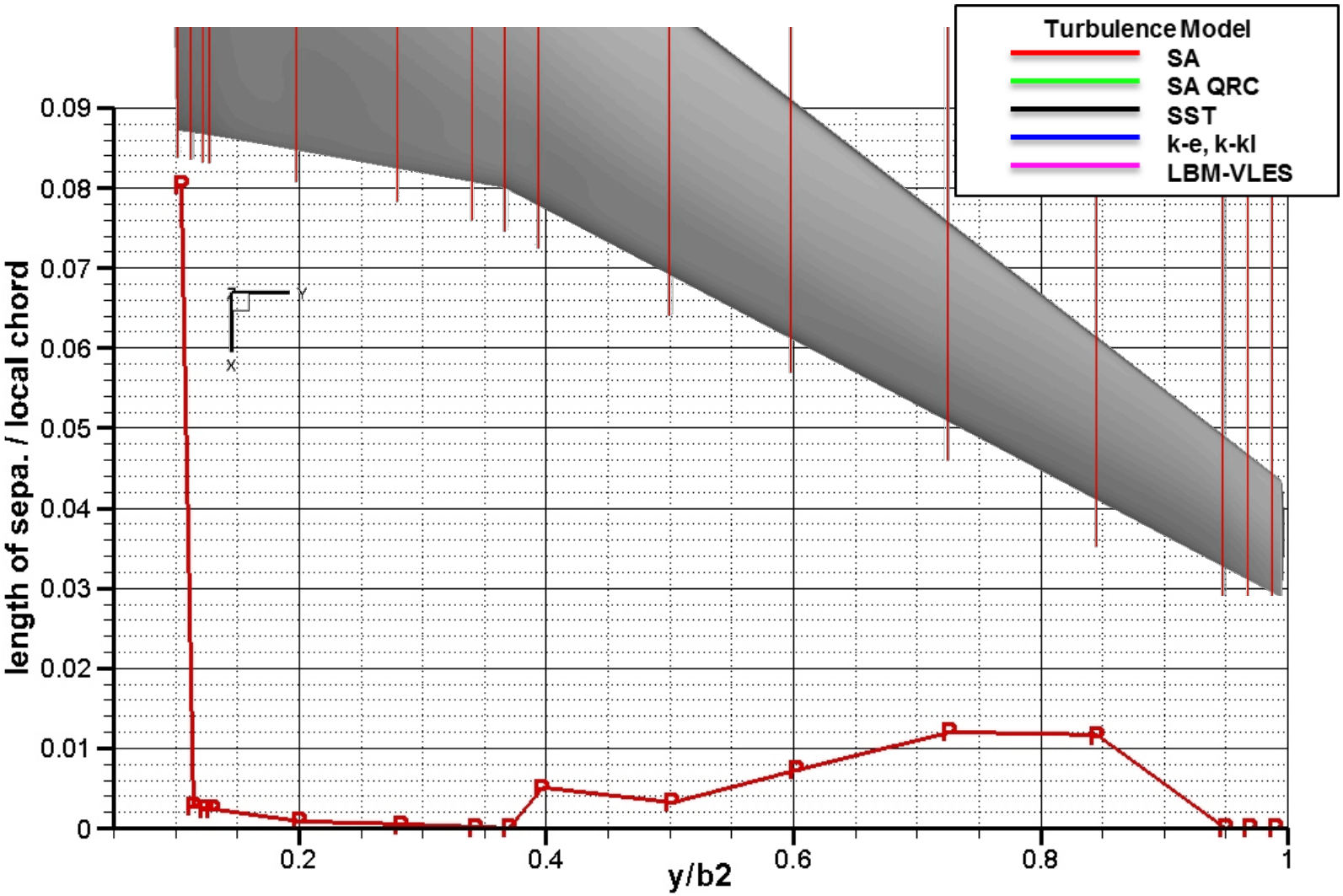
Case 2a (WB), Grid-5



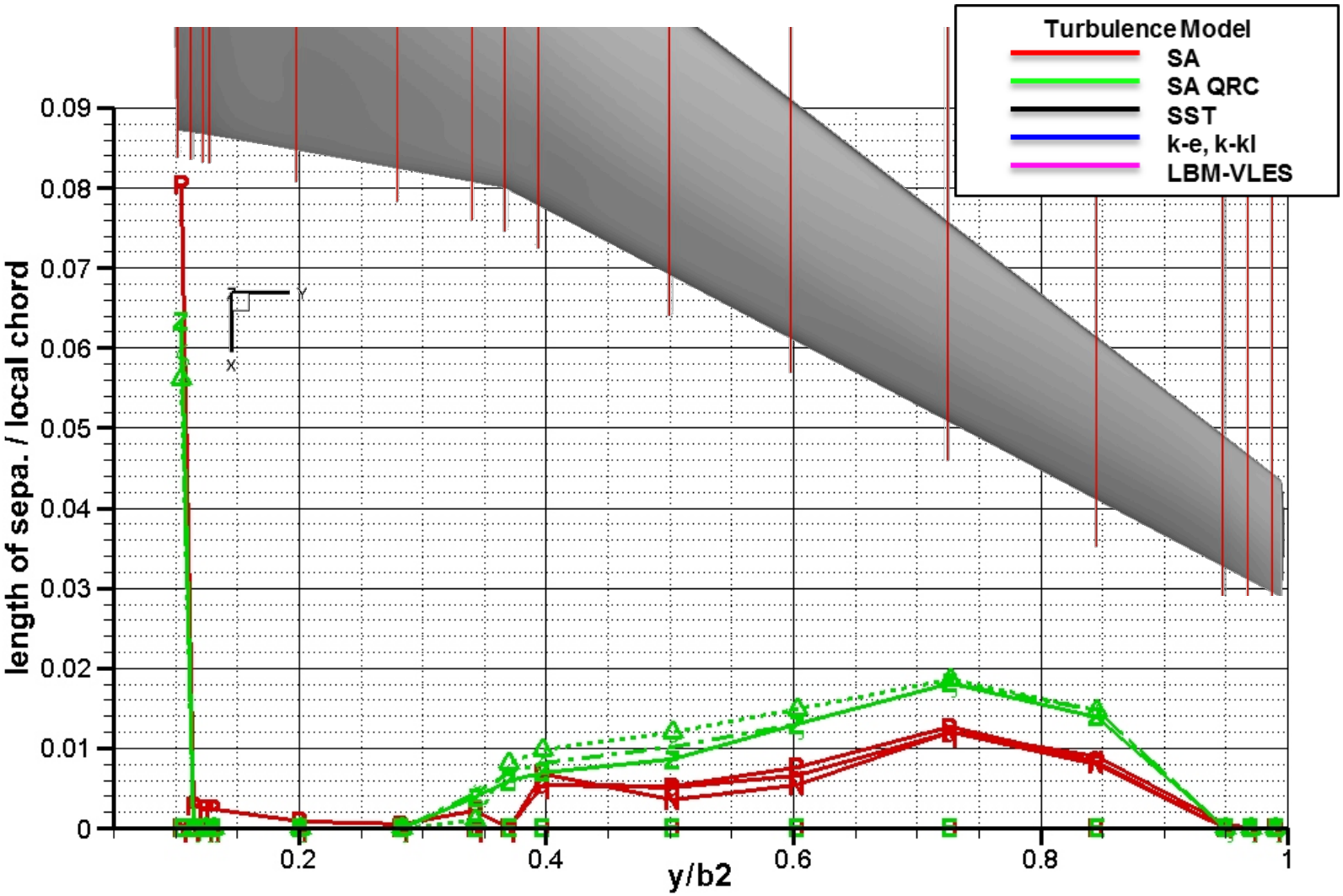
Case 2a (WB), Grid-6



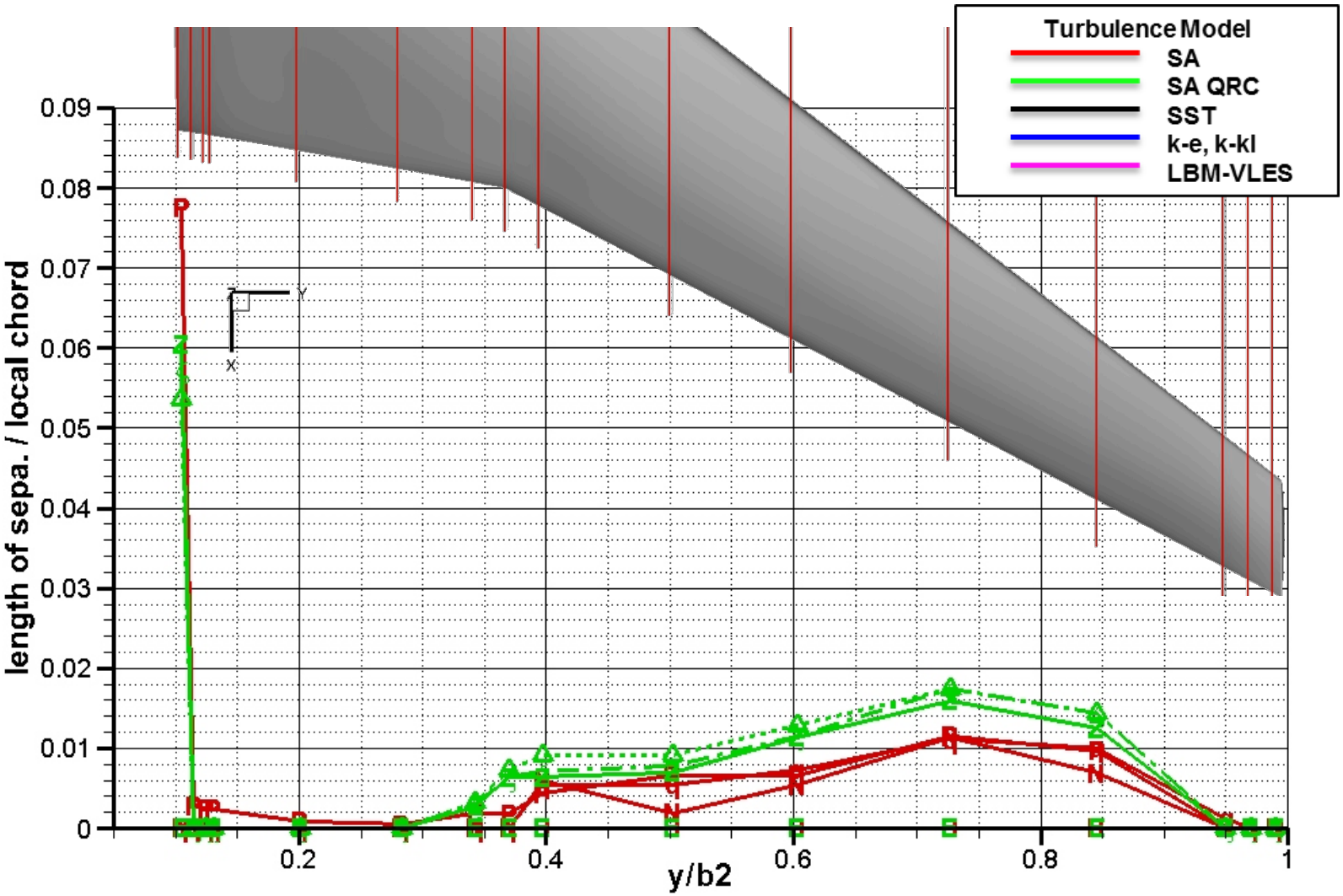
Case 2a (WB), Grid-7



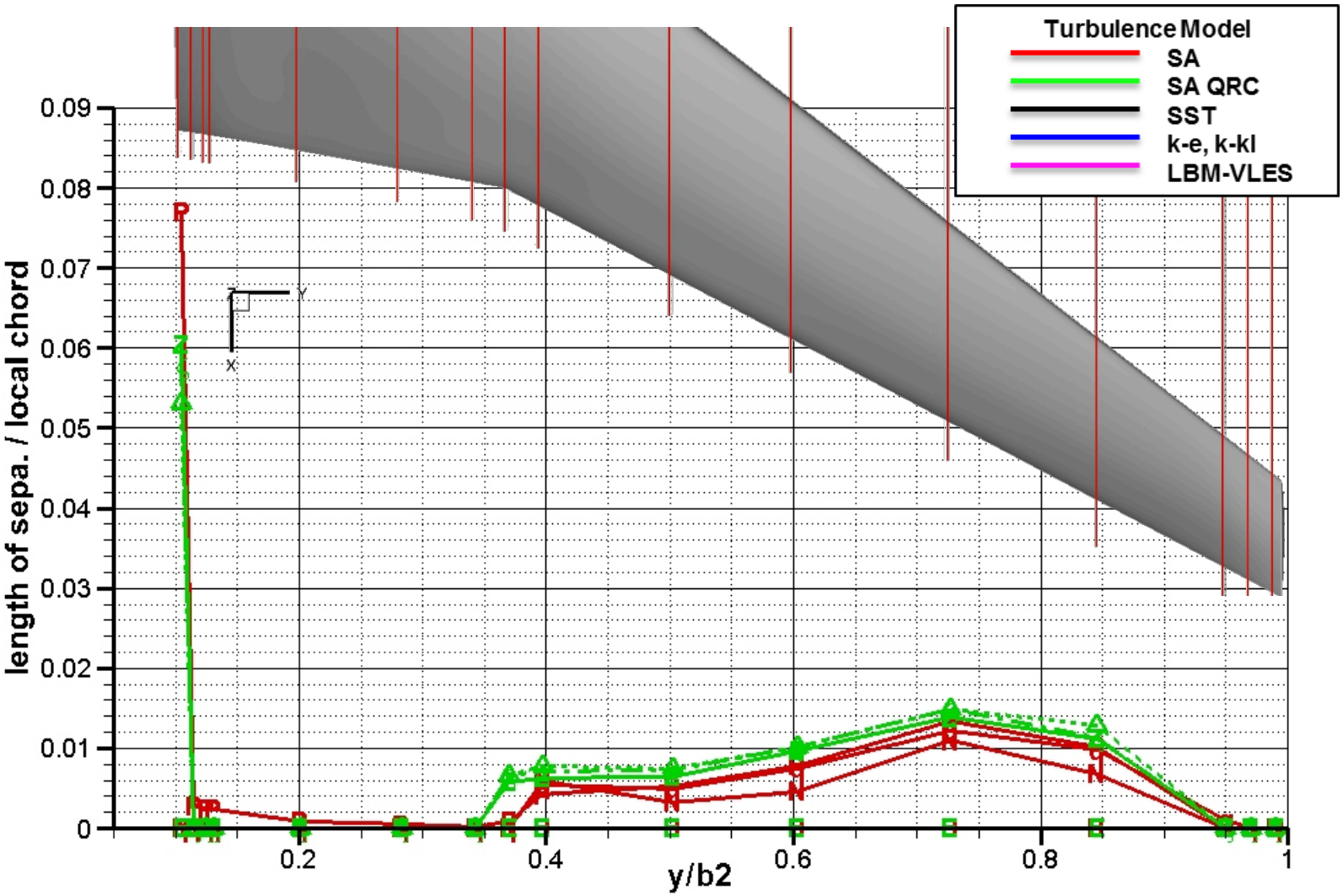
Case 2b (WBNP), Grid-1



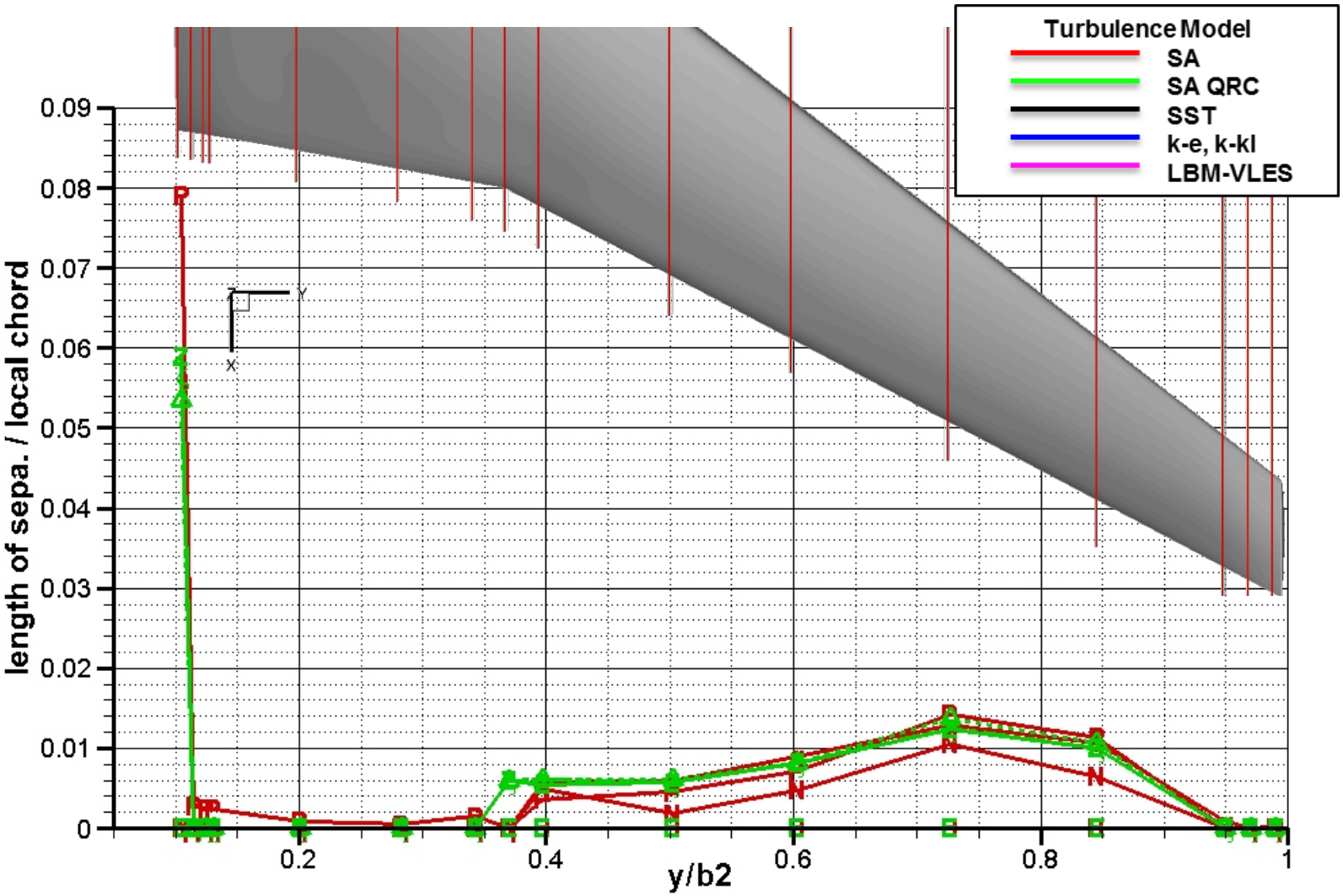
Case 2b (WBNP), Grid-2



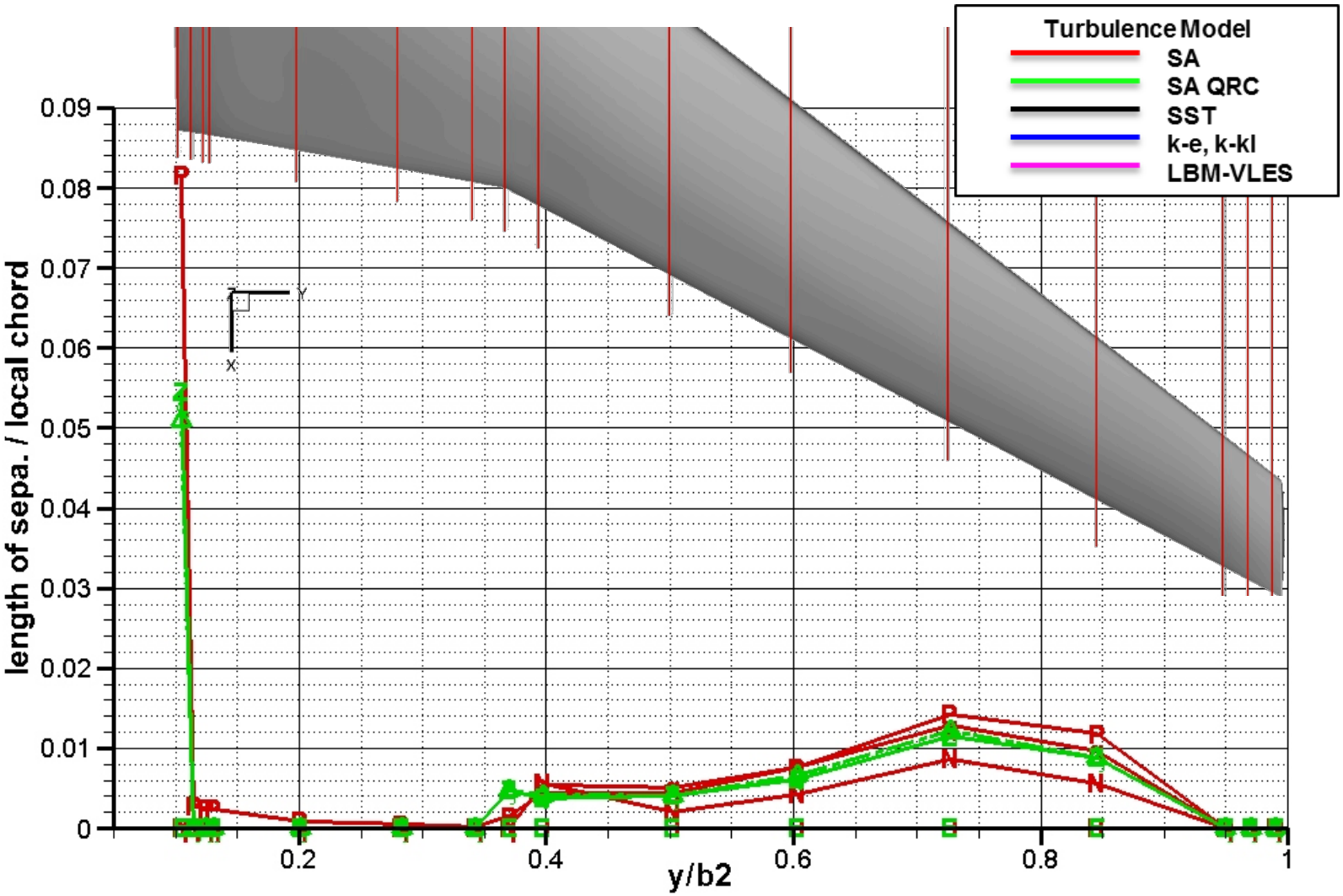
Case 2b (WBNP), Grid-3



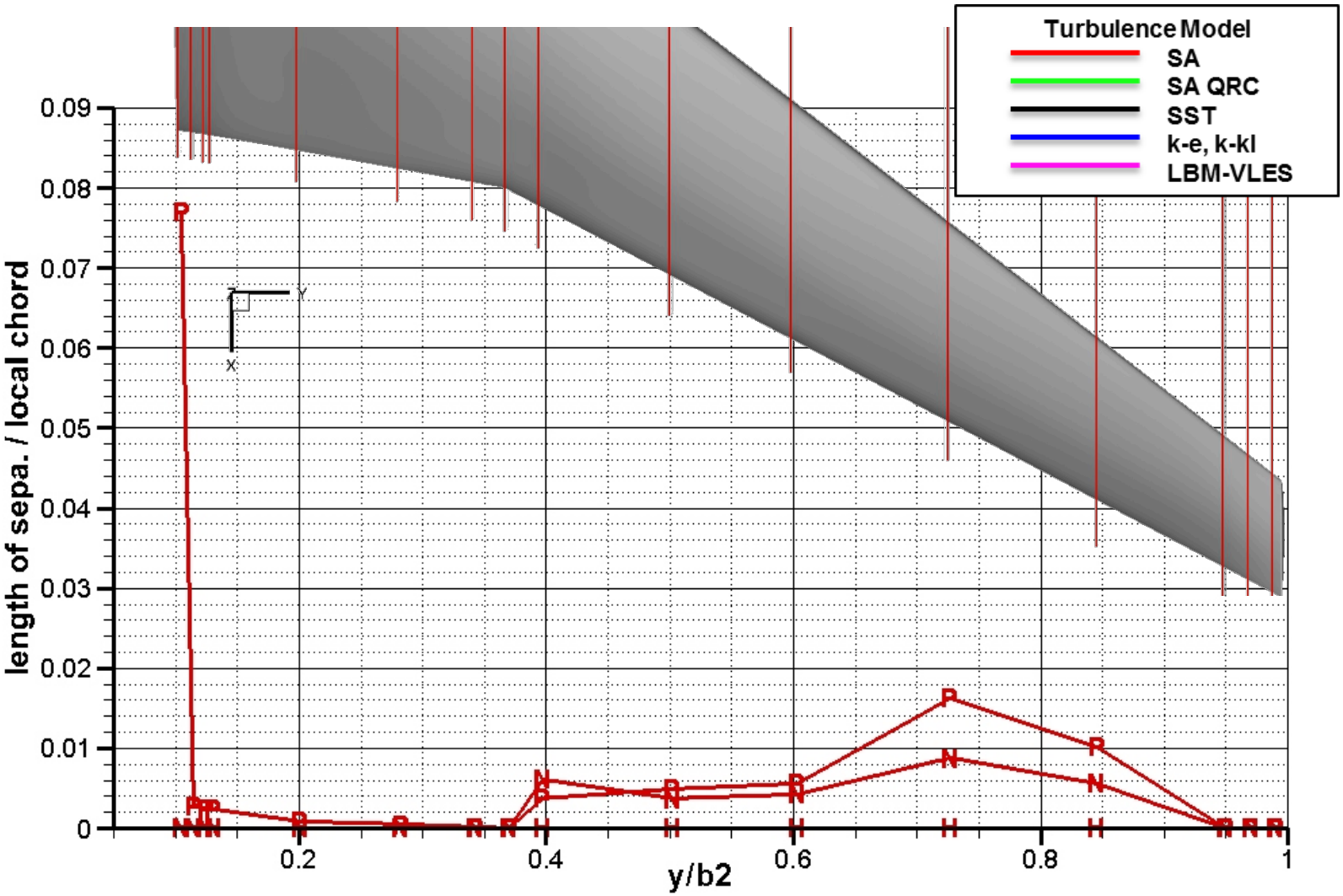
Case 2b (WBNP), Grid-4



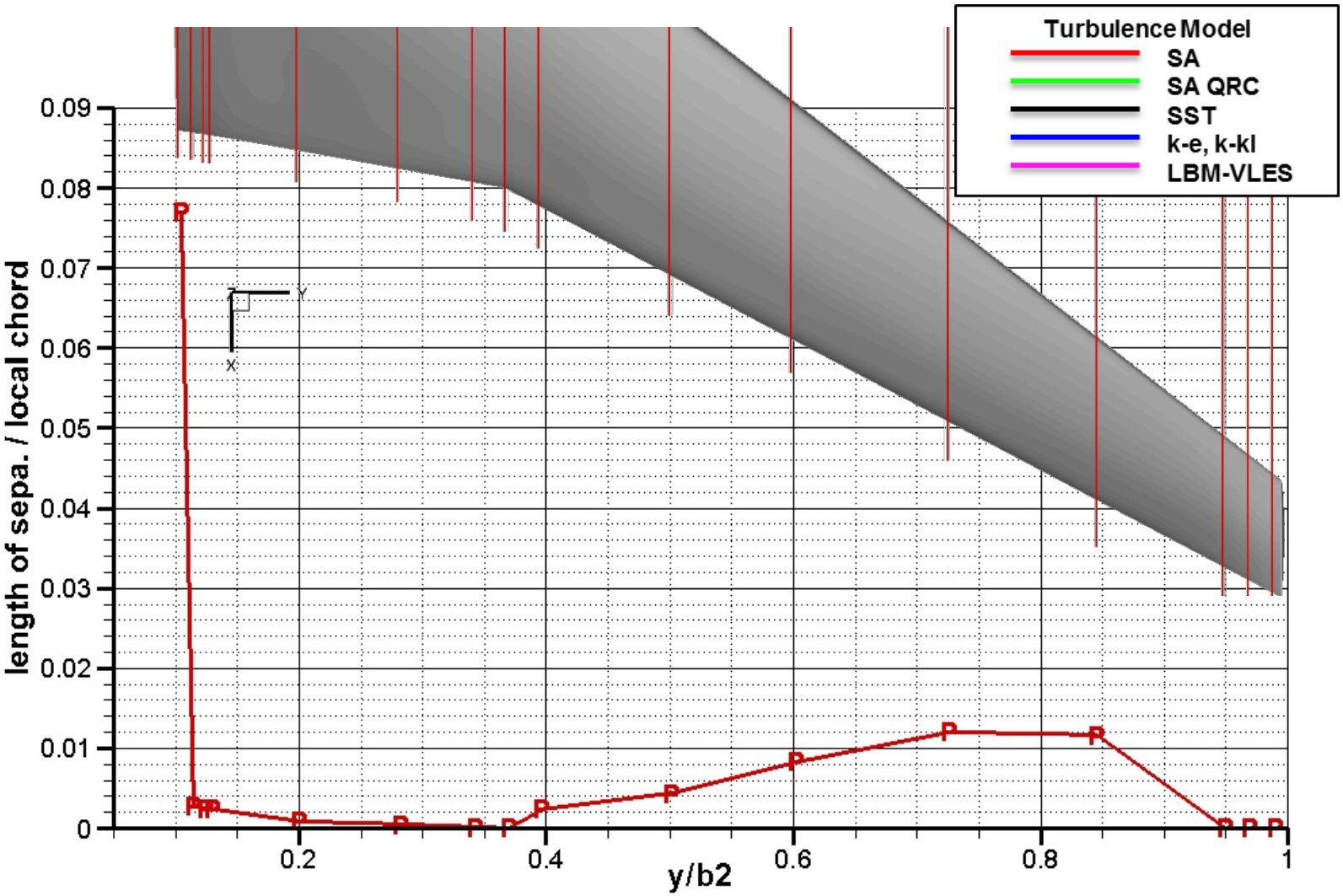
Case 2b (WBNP), Grid-5



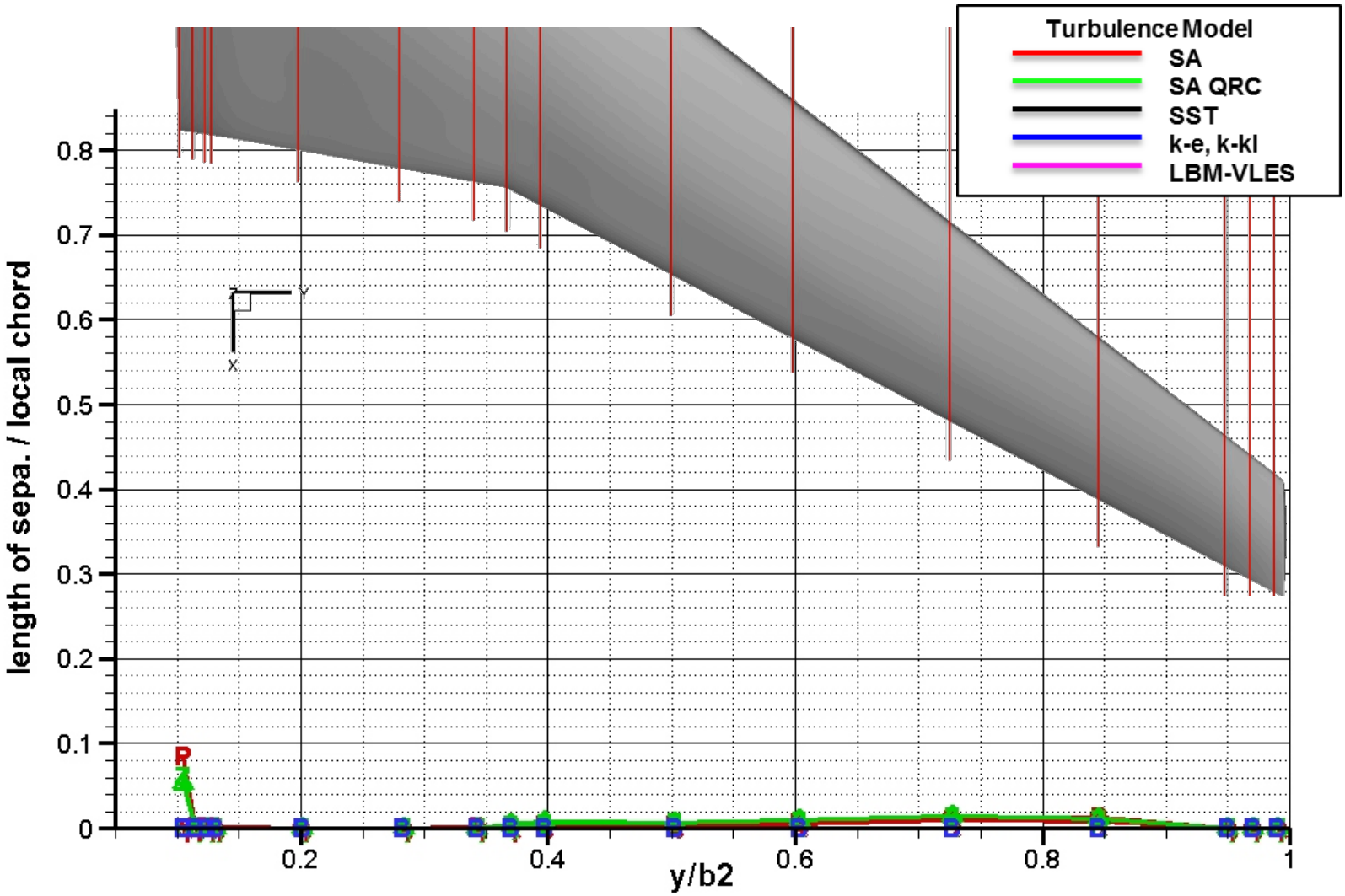
Case 2b (WBNP), Grid-6



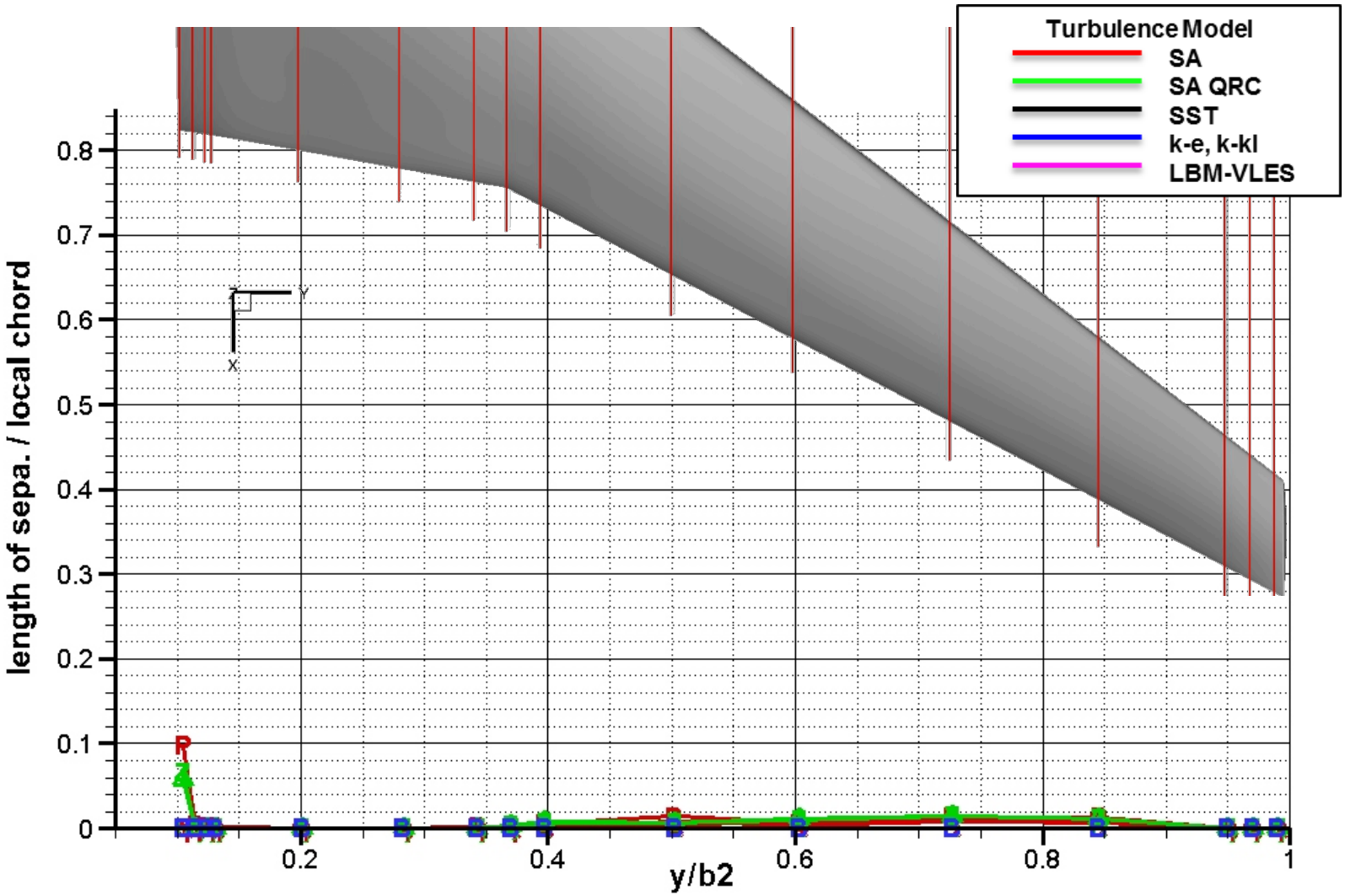
Case 2b (WBNP), Grid-7



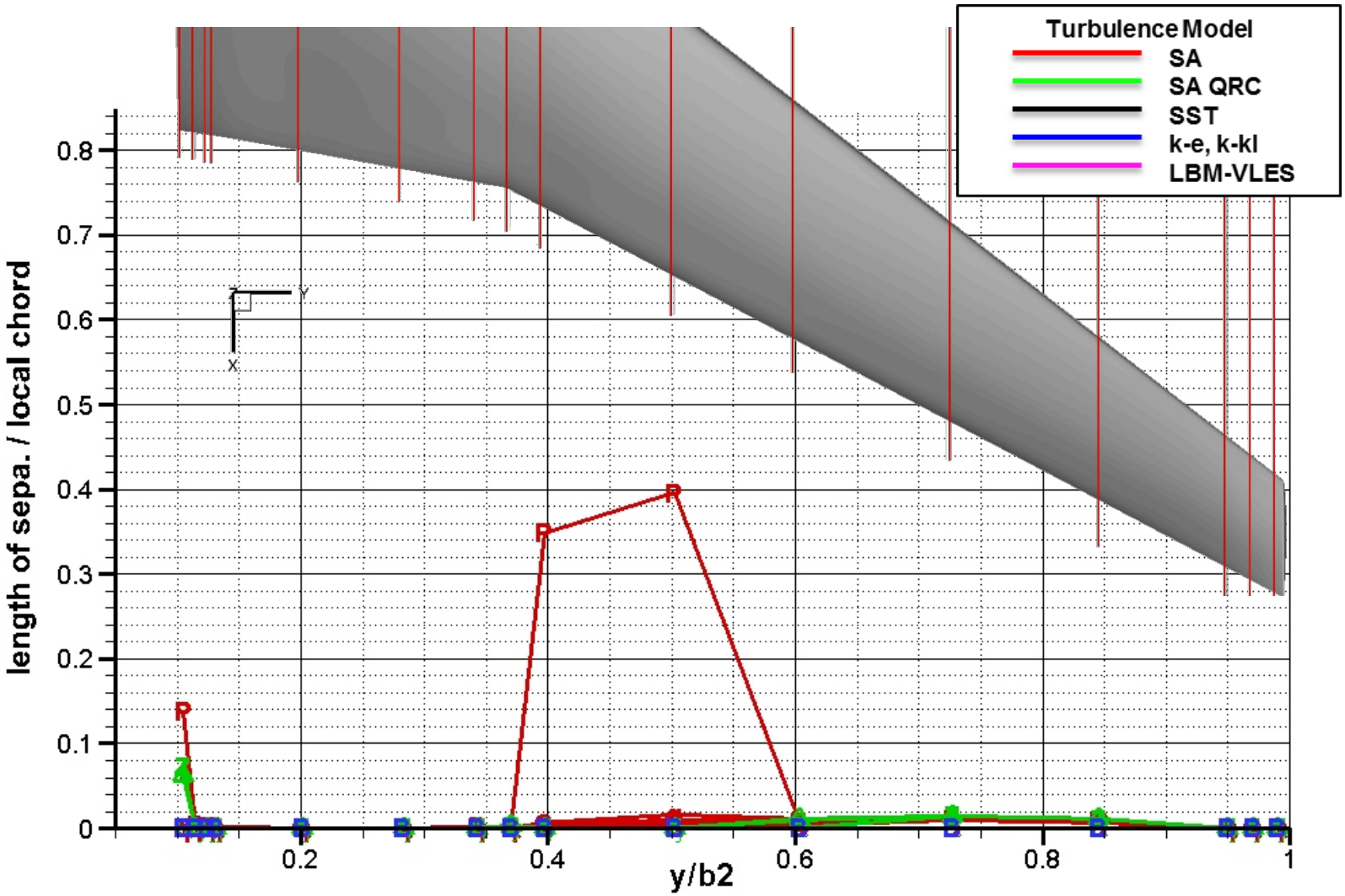
Case 3 (WB), α=2.5º



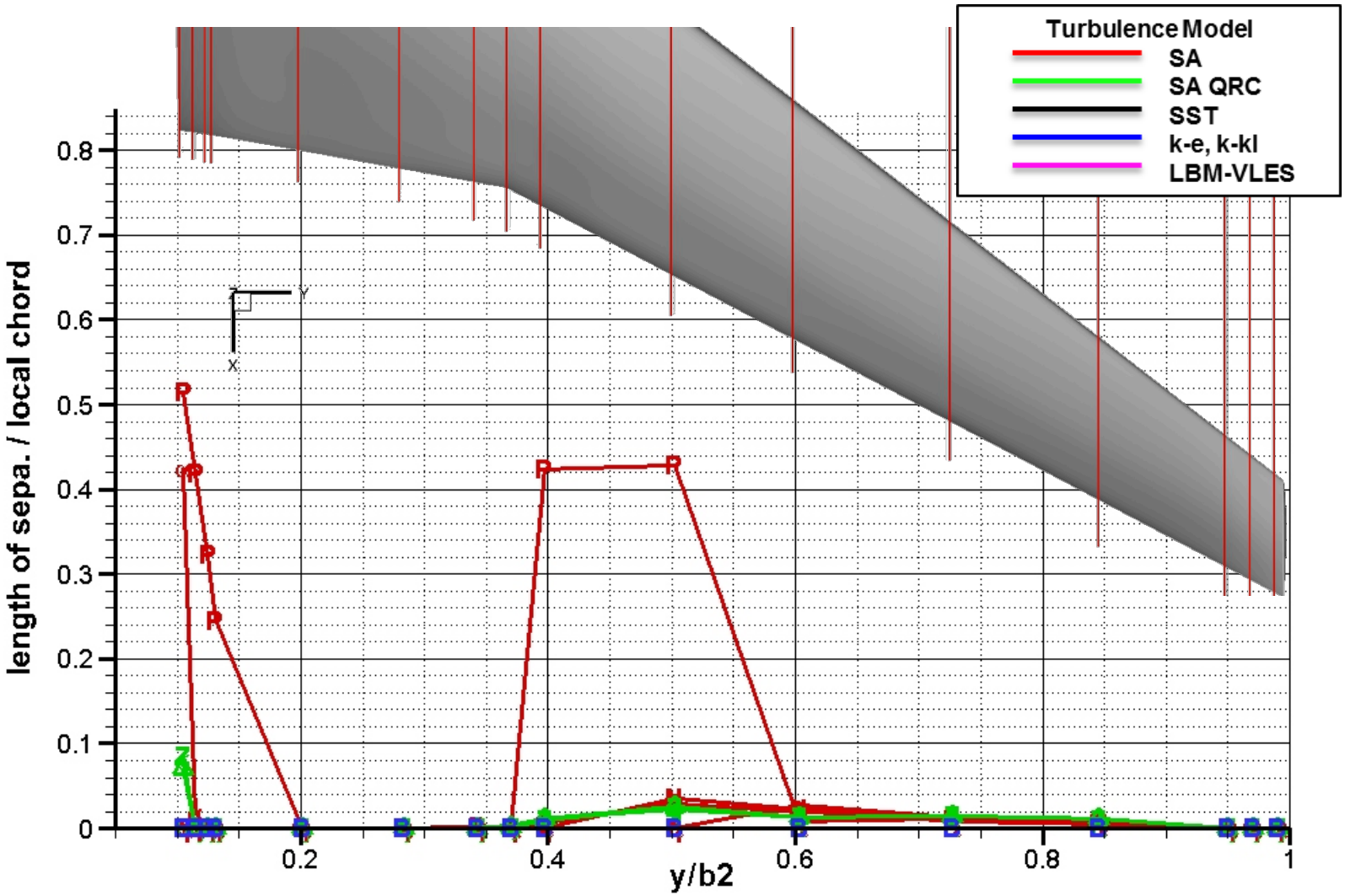
Case 3 (WB), α=2.75º



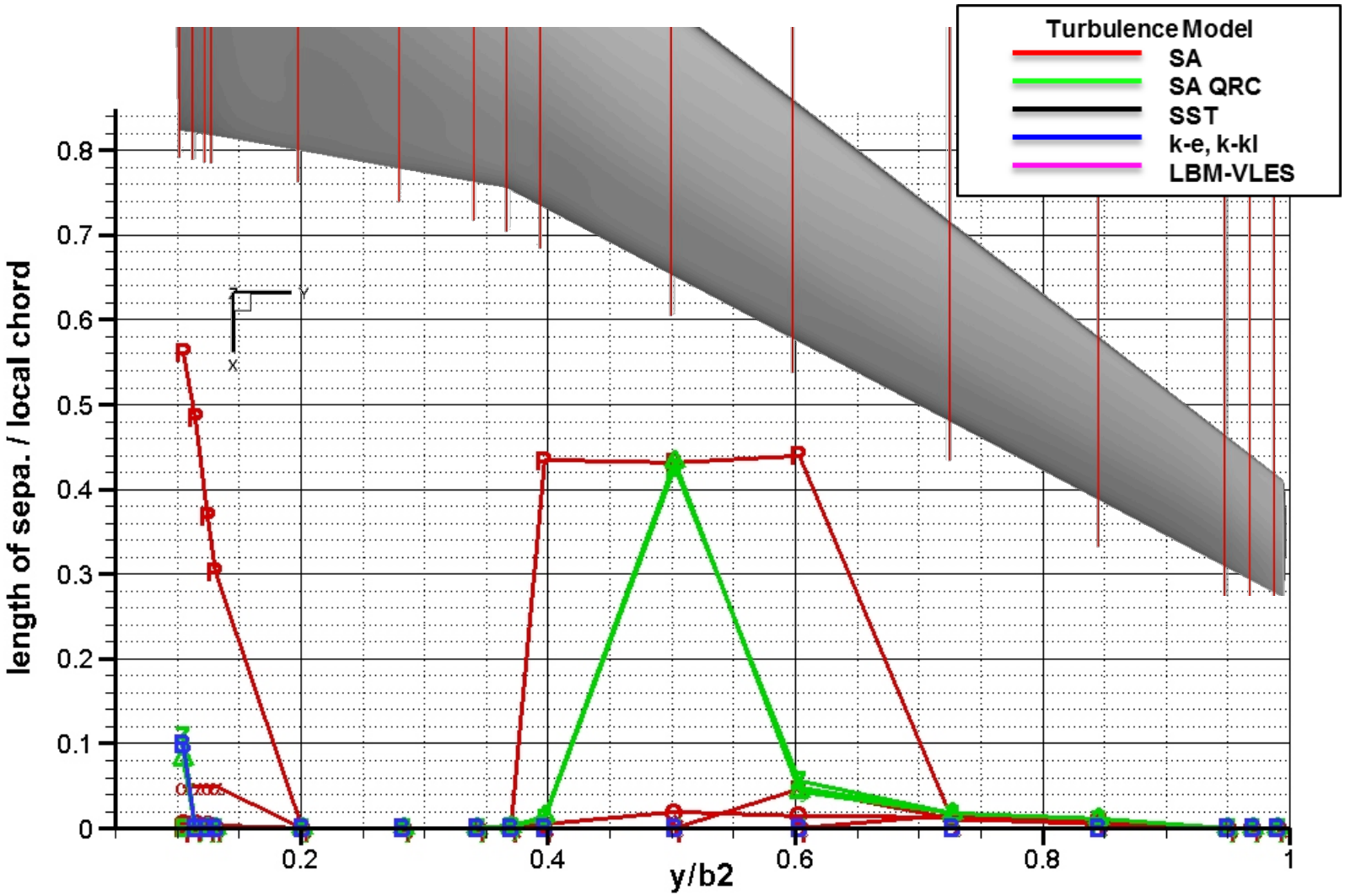
Case 3 (WB), α=3.0º



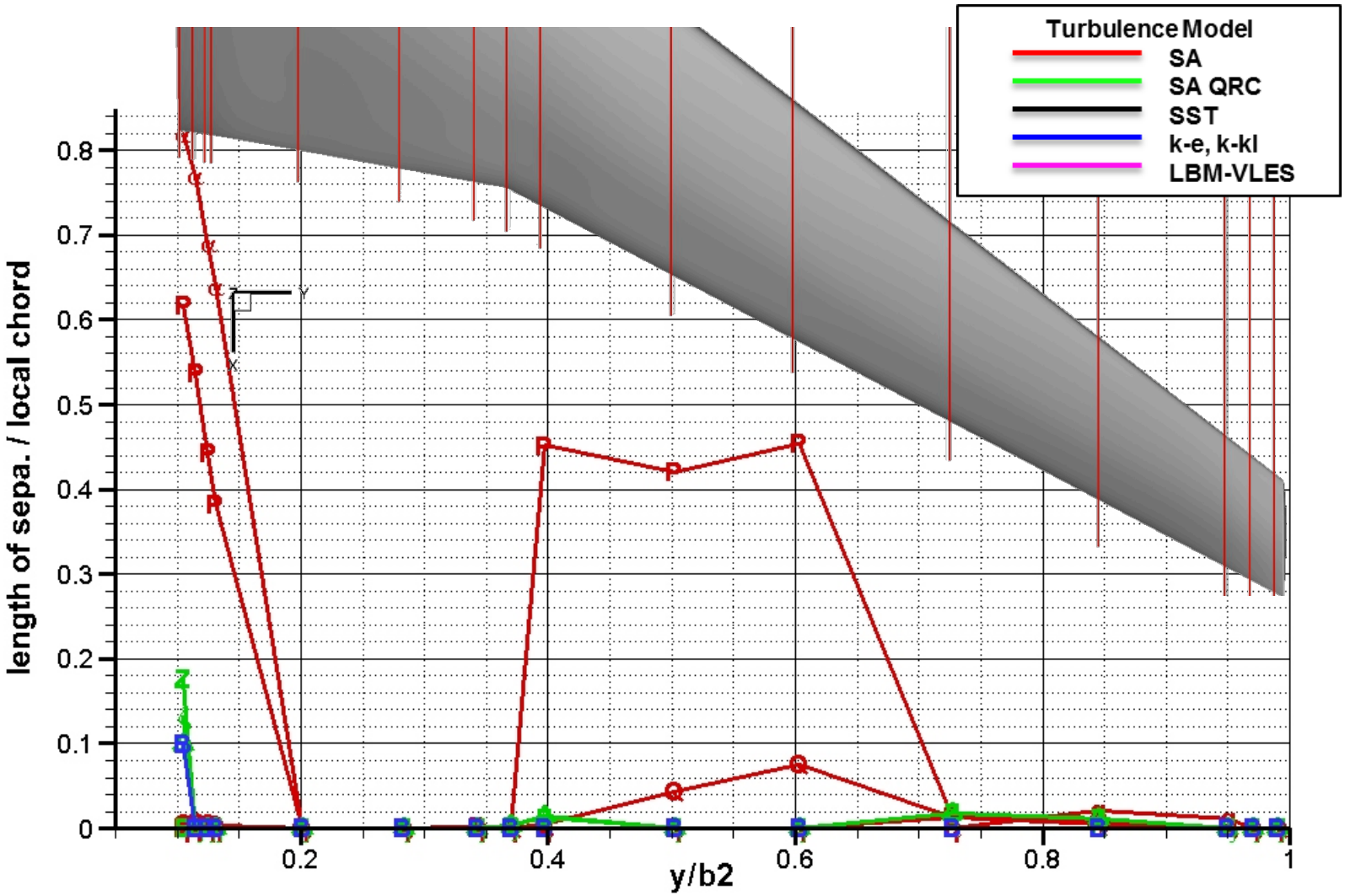
Case 3 (WB), α=3.25º



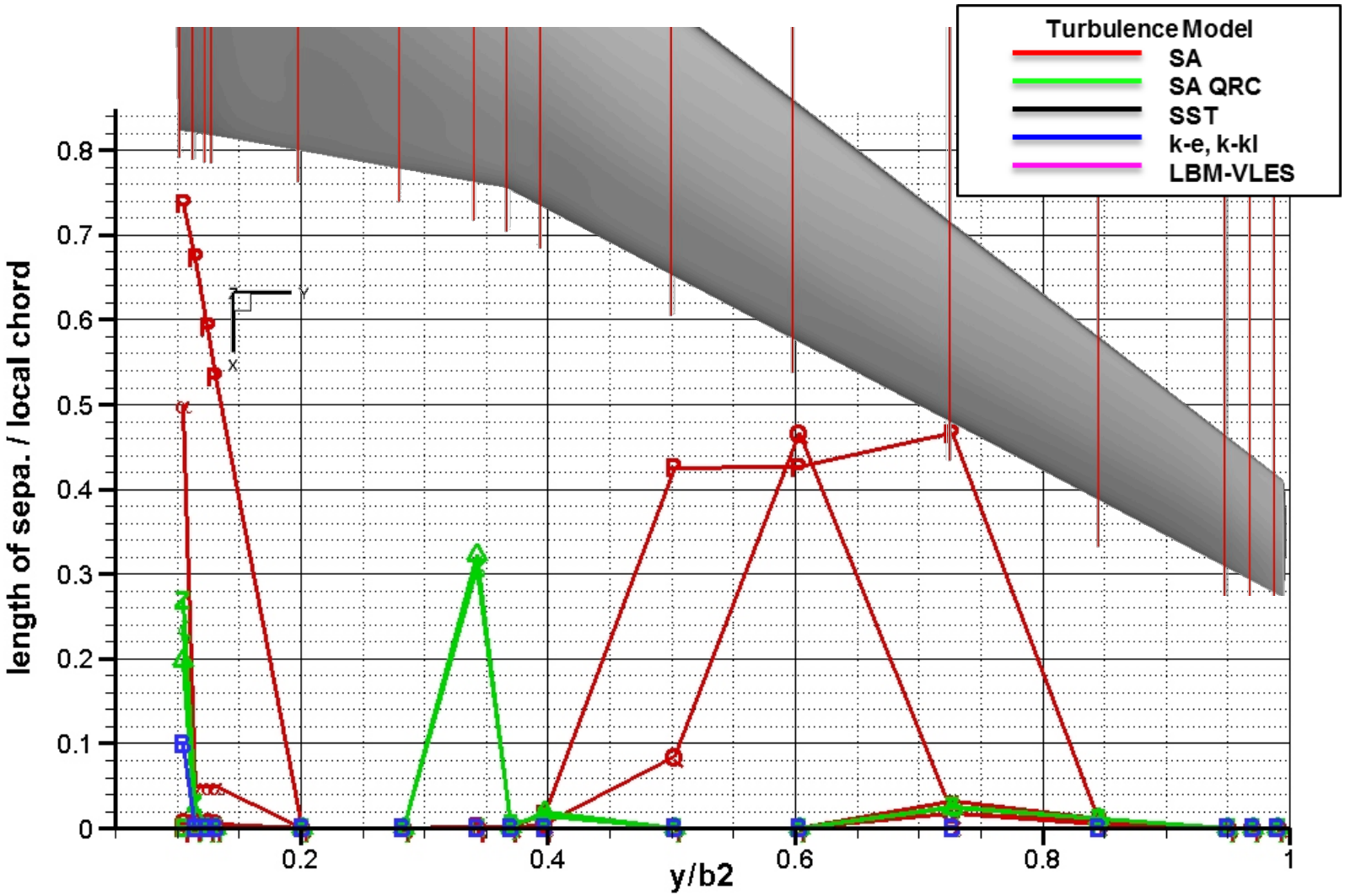
Case 3 (WB), α=3.5º



Case 3 (WB), α=3.75º



Case 3 (WB), α=4.0º



Case 3 (WB), α=3.0 & 4.0º

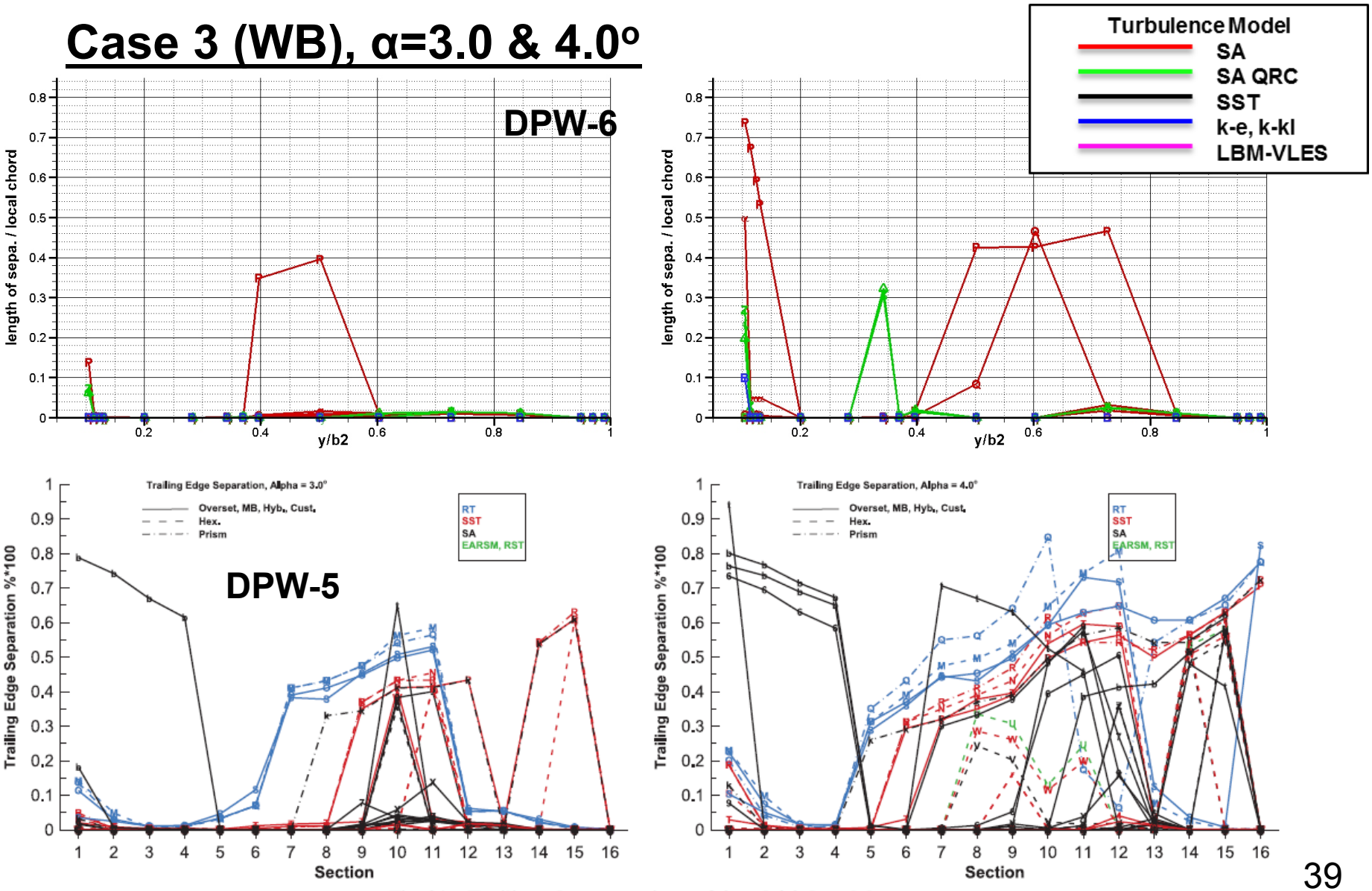
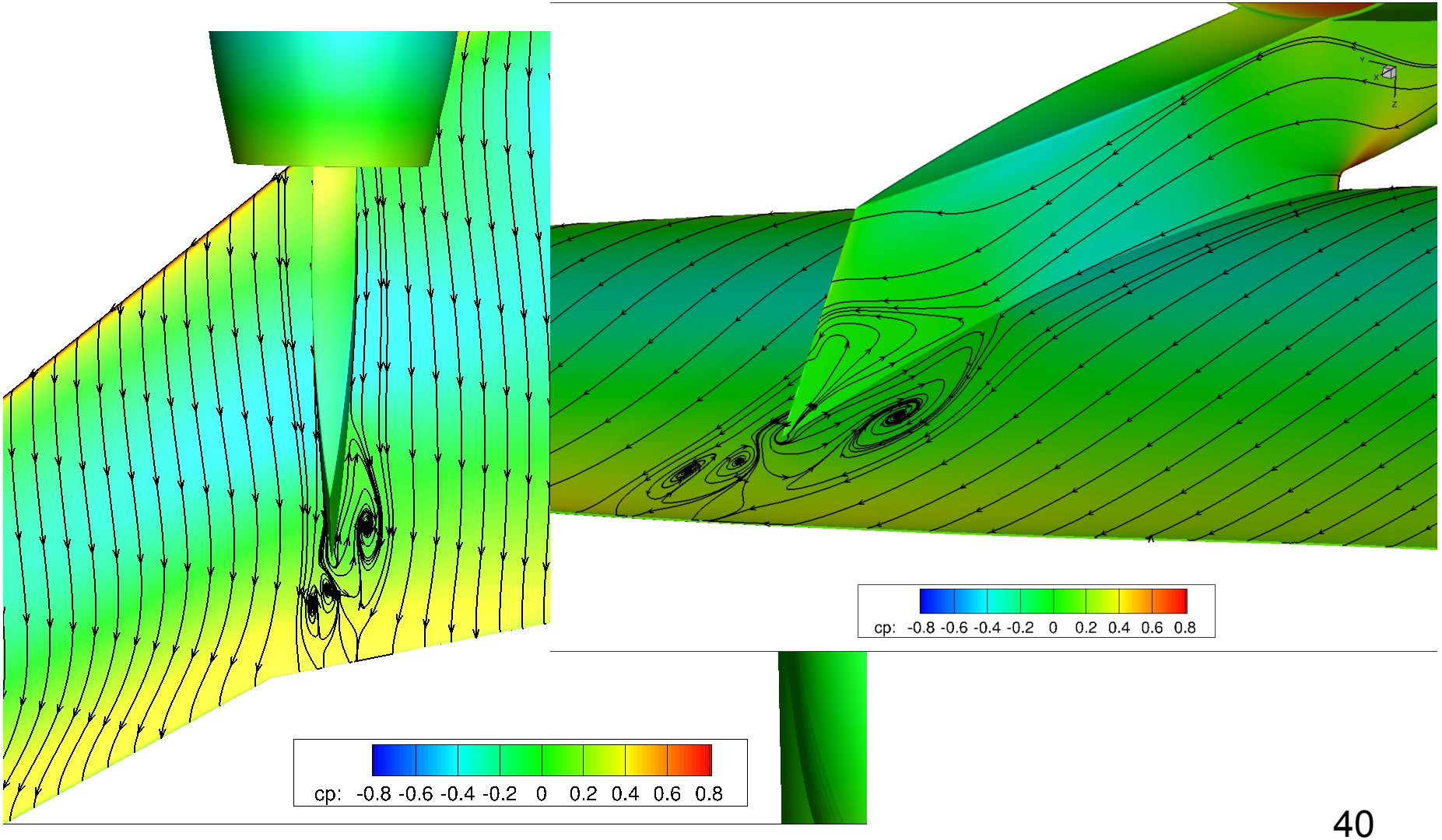


Fig. 21 Trailing edge separation at 3.0 and 4.0 deg alpha.

Case 2b (WBNP), Lower Surface Separation?



SOB-, TE-Separations

- No final assessment yet
- Please revisit your trailing edge data when re-submitting data