Supplemental video titles

Video 1

Caption:

An animation of velocity vectors and contours of spanwise vorticity calculated from TR-PIV images for k = 0.01. The plane bisects the hemisphere in the streamwise direction and is normal to the base plane. Flow is from left to right. The shape of the normalized inflow profile is depicted in figure 8 in the text. Refer to figure 7 for phase locations.

Link text:

video 1

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Video 2

Caption:

An animation of velocity vectors and contours of spanwise vorticity calculated from TR-PIV images for k = 0.025. The plane bisects the hemisphere in the streamwise direction and is normal to the base plane. Flow is from left to right. The shape of the normalized inflow profile is depicted in figure 9 in the text. Refer to figure 7 for phase locations.

Link text:

video 2

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Video 3

Caption:

An animation of velocity vectors and contours of spanwise vorticity calculated from TR-PIV images for k = 0.05. The plane bisects the hemisphere in the streamwise direction and is normal to the base plane. Flow is from left to right. The shape of the normalized inflow profile is depicted in figure 10. Refer to figure 7 for phase locations.

Link text:

video 3

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Video 4

Caption:

An animation of velocity vectors and contours of spanwise vorticity calculated from TR-PIV images for k = 0.1. The plane bisects the hemisphere in the streamwise direction and is normal to the base plane. Flow is from left to right. The shape of the normalized inflow profile is depicted in figure 11. Refer to figure 7 for phase locations.

Link text:

video 4

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Video 5

Caption:

An animation of velocity vectors (not scaled with velocity magnitude) with contours of spanwise vorticity for k = 0.2 computed with DNS. The plane is oriented streamwise and normal to the wall. Flow is from left to right. The shape of the normalized inflow profile is depicted in figure 14. Refer to figure 7 for phase locations.

Link text:

video 5

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Video 6

Caption:

An animation of Q-criterion = 15 isosurfaces for the k = 0.2 case. The isosurfaces are colored by spanwise vorticity. Flow is from left to right. Refer to figure 7 for phase locations.

Link text:

video 6

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Video 7

Caption:

An animation of velocity vectors (not scaled with velocity magnitude) with contours of spanwise vorticity for k = 0.01 computed with DNS. This animation is included for validation purposes and should be compared with the experimental (TR-PIV) results in the same case – Video 1. The plane is oriented streamwise and normal the base plane. Flow is from left to right. Refer to figure 7 for phase locations.

Link text:

video 7

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Video 8

Caption:

An animation of velocity vectors (not scaled with velocity magnitude) with contours of spanwise vorticity for k = 0.025 computed with DNS. This animation is included for validation purposes and should be compared with the experimental (TR-PIV) results in the same case – Video 2. The plane is oriented streamwise and normal the base plane. Flow is from left to right. Refer to figure 7 for phase locations.

Link text:

video 8

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Video 9

Caption:

An animation of velocity vectors (not scaled with velocity magnitude) with contours of spanwise vorticity for k = 0.05 computed with DNS. This animation is included for validation purposes and should be compared with the experimental (TR-PIV) results in the same case – Video 3. The plane is oriented streamwise and normal the base plane. Flow is from left to right. Refer to figure 7 for phase locations.

Link text:

video 9

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Video 10

Caption:

An animation of velocity vectors (not scaled with velocity magnitude) with contours of spanwise vorticity for k = 0.1 computed with DNS. This animation is included for validation purposes and should be compared with the experimental (TR-PIV) results in the same case – Video 4. The plane is oriented streamwise and normal the base plane. Flow is from left to right. Refer to figure 7 for phase locations.

Link text:

video 10

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