Studi blockage effect terhadap aliran tiga dimensi pada konfigurasi wing dengan flat surface

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Abstrak

Studi ini dibuat untuk memenuhi informasi kualitatif aliran dan efek blockage pada interseksi unsymmetrical wing dengan flat surface. Kajian menggunakan computational fluid dynamics untuk memberikan informasi pola pathlines dan distribusi isototal static pressure
daerah sambungan. Hasil -hasil penelitian ini menunjukkan pola aliran dipengaruhi angle of attack. Bertambahnya angle of attack
menjadikan posisi saddle point bergerak menuju lower side dan menjauhi permukaan wing. Sedangkan, separation line atau imprint horseshoe vortex karena membesarnya angle of attack menjadi
terbuka lebih lebar. Hasil - hasil kontur isototal static pressure
menunjukkan bahwa lokasi dampak blockage semakin lebar menuju downstream trailing edge. Demikian juga bertambahnya angle of ttack menjadikan daerah efek blockage pada pressure side dan suction side semakin lebar.

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Abstract

The study was made to obtain qualitatively information about flow and blockage effect on unsymmetrical wing with flat surface intersection. The computational fluid dynamics was used in order to
gain information of the pathlines patterns and the distribution of isototal static pressure on the junction region.

Results show that an increase of angle of attack will move the saddle point to the lower side away from the wing surface. Meanwhile
the separation line or imprint horseshoe vortex that resulted by the
increase of angle of attack, will become wider. The isototal static pressure contour shows that the location which are effected by blockage are wider toward the downstream trailing edge. And as the an gleof attack increase, the area that are effected by blockage on pressure side and suction side will become even wider.