

SUMMARIES REZIMEA

¹ NUMERICAL SIMULATION OF AIR FLOW THROUGH TWO DIFFERENT SHAPED AIR VENTS

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Abstract

Air conditioning vents shape represents one of the cockpit features that give style and also functionality in modern cars. In this paper our aim is to analyze the functional shape of the vents regarding their influence to the air flow through them using CFD software. For the simulation, we will use two different shaped air vents, both with the same functional area.

They will have the fins opened at maximum position, thus permitting the biggest air flow.

Using Ansys Fluent CFD software we will simulate the air flow distribution through this two different shape vents, and we will compare the results for both cases in terms of air speed distribution at different distances from the outlets extremities.

Key words: numerical simulation, air flow, CFD software, vents, Fluent.

NUMERIČKA SIMULACIJA PROTOKA VAZDUHA KROZ DVA VENTILACIONA OTVORA RAZLIČITOG OBLIKA

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Rezime: Oblik ventilacionih otvora klima-uređaja predstavlja jednu od karakteristika kabine koja odslikava stil i funkcionalnost kod savremenih vozila. U ovom radu, naš cilj je analiza funkcionalnog oblika otvora u pogledu njegovog uticaja na protok vazduha, korišćenjem CFD softvera. U simulacijama ćemo koristiti dva ventilaciona otvora različitog oblika, pri čemu oba otvora imaju istu funkcionalnu površinu. Oni će imati maksimalno otvorena krilca, čime se dozvoljava najveći protok vazduha.

Korišćenjem Ansys Fluent CFD softver, simuliraćemo raspodelu protoka vazduha kroz ova dva otvora različitog oblika i upoređićemo rezultate u oba slučaja preko raspodele brzine vazduha na različitoj udaljenosti od izlaza.

Ključne reči: numerička simulacija, protok vazduha, CFD softver, otvori, Fluent.

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