DocumentID	241195
Vortragstitel	Automatic Generation of 3D-CAD Models to Bridge the Gap between Aircraft Preliminary Sizing and Geometric Design
Autoren	J. Abulawi, K. Seeckt, M. Pommers, D. Scholz
Preisträger	
Vortragssprache	englisch
Seiten	11
Veranstaltung	Deutscher Luft- und Raumfahrtkongress 2011
Veranstaltungsort	Bremen
Veröffentlicht in	Deutscher Luft- und Raumfahrtkongress, Tagungsband - Manuskripte, 2011; Seite 405 - 416; DGLR e.V.; Bonn; 2011
Stichwörter	Aircraft Preliminary Sizing
	Geometric Model Generation
Abstract

This paper presents an extension to the Aircraft Preliminary Sizing Tool PreSTo which has been developed at the HAW Hamburg. The extension is called "PreSTo-Vis"; it bridges the gap between the mathematical sizing process and three-dimensional (3D) geometrical aircraft design. The core of this add-on to PreSTo is a universal aircraft surface model which was created using an advanced parametric associative design method in the 3D computer-aided design (CAD) system CATIA V5. A Microsoft Excel-based Visual Basic project automatically reads the output spreadsheets of the preliminary sizing process, processes these data and reconfigures the 3D CAD model to visualize the concept geometry of the new aircraft. Thus the design engineer has the chance to gain a three-dimensional impression of the calculated aircraft dimensions, and he obtains a parametric surface model in a native CAD format suitable for further geometric refinement and analysis.