

Experimental Research of Dynamic Derivatives of Unsteady Moved Aircraft

Thomas Loeser
DNW German - Dutch Wind Tunnels

February 2008

Contents

1	Nomenclature	2
2	Introduction	3
3	Review	4
3.1	Definition of the dynamic derivatives	4
3.2	Dynamic testing techniques	5
3.3	Dynamic testing at DNW	6
4	Wind tunnel models	8
5	Instrumentation issues	9
5.1	Force measurement	9
5.2	Model position measurement	9
5.3	Pressure measurement	10
5.4	Data acquisition	11
6	Data evaluation	12
6.1	Assumptions	12
6.2	Evaluation by Fourier analysis	14
6.3	Accuracy	15
7	Figures	18