

AERO-ACOUSTIC TRAINING COURSE

NOVEMBER 2008

MIRA is offering industry and universities the opportunity to learn from our aero-acoustic experts who have extensive experience of working with major automotive manufacturers. This is an introductory course aimed at engineers from other disciplines who need to develop an understanding of vehicle aero-acoustic principles and how they impact on different areas of vehicle design.

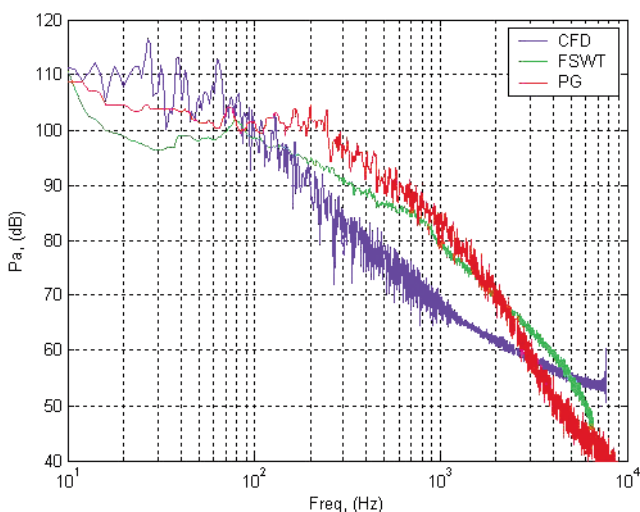


This is an interactive 3-day course including:

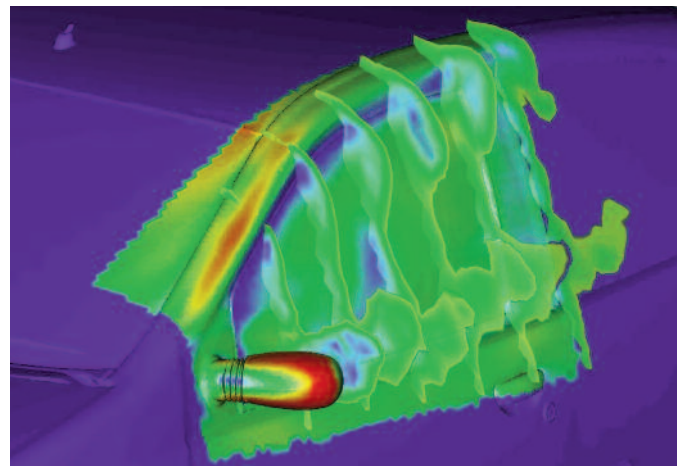
- ◆ Workshop sessions in MIRA's full-scale wind tunnel
- ◆ Computational Fluid Dynamics (CFD)
- ◆ Presentations from MIRA's aerodynamics experts
- ◆ Presentations from industry experts
- ◆ Physical demonstrations
- ◆ Case studies
- ◆ Consultancy sessions

This course content comprises:

- ◆ Introduction to vehicle aerodynamics
- ◆ Experimental techniques used in aero-acoustic development
- ◆ Simulation techniques used in aero-acoustic development



Comparison of CFD and wind tunnel predictions with measured values from MIRA's proving ground.



CFD simulation of wing mirror wake.



Experimental testing in MIRA's full-scale wind tunnel.

TRAINING COURSE AGENDA

DAY 1		DAY 2		DAY 3	
START	CONTENT	START	CONTENT	START	CONTENT
08:30	Refreshments	08:30	Refreshments	08:30	Refreshments
08:45	Introduction	08:45	Human Perception of Noise	08:45	Wind noise testing in MIRA FSWT
09:00		09:00		09:00	
09:15	Aero-acoustics in Vehicle Development	09:15	Aspects of Wind Noise	09:15	
09:30		09:30		09:30	
09:45	Introduction to Vehicle Aerodynamics	09:45		09:45	
10:00		10:00		10:00	
10:15		10:15	10:15		
10:30	Break	10:30	Break	10:30	Break
10:45	Introduction to Experimental Aerodynamics	10:45	Practical demonstrations in MIRA Proving Ground	10:45	Flow visualisations & measurements in the MIRA FSWT – Demo
11:00		11:00		11:00	
11:15		11:15		11:15	
11:30	Introduction to CFD Techniques	11:30	Ultrasound Leak Detection	11:30	
11:45		11:45		11:45	
12:00		12:00		12:00	
12:15	Lunch	12:15	Lunch	12:15	Lunch
12:30		12:30		12:30	
12:45		12:45		12:45	
13:00		13:00		13:00	
13:15	CFD at MIRA, Practical Demo	13:15	Wind Noise Measurement Techniques	13:15	Surface visualisations in the MIRA FSWT – Demo
13:30		13:30		13:30	
13:45		13:45		13:45	
14:00		14:00		14:00	
14:15		14:15		14:15	
14:30	Break	14:30	Break	14:30	Break
14:45	Fundamentals of Acoustics	14:45	Interior noise source identification in NVH anechoic facility – Demo	14:45	Objective aeroacoustic measurements in the MIRA FSWT – Demo
15:00		15:00		15:00	
15:15		15:15		15:15	
15:30		15:30		15:30	
15:45		15:45		15:45	
16:00	Equipment practical demonstrations	16:00		16:00	
16:15		16:15		16:15	
16:30		16:30		16:30	
16:45		16:45		16:45	
17:00	Q & A	17:00	Q & A	17:00	Q & A

For further information contact:

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