



Introduction to Cluster activities

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Co-ordinator Turbomachinery Cluster





Scope of the research projects:

To achieve
Cleaner & More Efficient Gasturbines
by component improvement:

- Compressor
- Turbine
- Advanced Cooling System
- Intake and Exhaust Design



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Pre-competitive cooperation of European Gas Turbine Makers and Universities to meet the requirements of the market:

- Update in-house design systems by exploring most advanced experimental and theoretical design tools
- Create novel data base for in-house code validation
- Maintain high level engineering education at European Universities





Current research trends in Turbomachinery aerodynamics:

- Establish design rules to reduce secondary and unsteady losses
- Focus on stage matching for wide operating range
- Consider effect of leakage flow on efficiency and stability
- Fluid- Structure Interaction
- Advanced internal cooling and secondary flow systems



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Research trends for Industrial Gas Turbines currently covered by EU- FP5 Projects:

- Flows in turbines with emphasis on off-design behaviour:
(DAIGTS)
- Unsteady flows in gas turbine compressors
(DITCAD)





Research trends for Industrial Gas Turbines currently missing:

- Intake, compressor diffusers and exhaust
- Secondary flow systems



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AGENDA

10.30am – 12.30pm Breakout session – Room 1

Turbomachinery Cluster – Co-ordinator – Alexander Wiedermann

- Introduction to Cluster activities
Alexander Wiedermann
- FPV Project – DAIGTS
Ian Amos
- FPV project – DITCAD
Eugenio Rossi/Alexander Wiedermann
- Turbine Internal flows
Dieter Bohn
- Compressor flow
Frank-Oliver Methling
- Small Gas Turbines
Andre Mom
- TGRA-EEFA - Overview Turbomachinery Projects
Stephan Servaty
- EEFTRA Turbomachinery projects
Sacha Parneix

