

Publications of T. Arts 1981 - 2010

Contributions to books (including VKI Lecture Series Director)

ARTS, T.

Convective heat transfer with the film cooling around a rotor blade.

contribution to "Modern Research Topics in Aerospace Propulsion, in Honor of Corrado Casci"
eds G. Angelino, L. De Luca, W.A. Sirignano; New-York-Berlin-London, Springer Verlag, 1991, pp 253-274
VKI Preprint 1989-22

ARTS, T.

Measuring Techniques for Transonic and Supersonic Flows in Cascades and Turbomachines
Proceedings of 10th Symposium on Measuring Techniques ..., Brussels, Belgium., September 1990.
eds C.H. Sieverding & T. Arts, von Karman Institute, 1991

ARTS, T.

Time marching finite volume techniques applied to turbomachinery.

Computational Fluid Dynamics Techniques, Habashi and Hafez, eds, pp 143-158, Gordon & Breach Publ. Group,
1995

VKI Preprint 1990-23

SIEVERDING, C.H.; ARTS, T.; DENOS, R.

Investigation of the wake mixing process behind transonic turbine inlet guide vanes with trailing edge coolant flow ejection.

In "Advances in Engine Technology" edited by R. Dunker, John Wiley & Sons Ltd, 1995, pp 153-359
VKI Preprint 1995-38

ARTS, T.

Temperature Measurements

Edited by the von Karman Institute for Fluid Dynamics, April 22 – 26, 1996, VKI LS 1996-07

ARTS, T.

Aero-thermal Performance of Internal Cooling Systems in Turbomachines

Edited by the von Karman Institute for Fluid Dynamics, February 28 – March 3, 2000, VKI LS 2000-03

ARTS, T.

Film cooling: What did we learn from our measurements?

In "Heat transfer in gas turbine systems", *Annals of the New York academy of science*, 2001, Vol. 934, pp 126-134
VKI RP 2001-33

ARTS, T.

Recent Developments in Numerical Methods for Turbomachinery

Edited by the von Karman Institute for Fluid Dynamics, November 5 – 9, 2001, VKI LS 2002-01

ARTS, T.

Turbine blade tip design and tip clearance treatment

Edited by the von Karman Institute for Fluid Dynamics, January 19 – 23, 2004, VKI LS 2004-02

ARTS, T.

Data acquisition and signal processing for turbomachinery applications

Edited by the von Karman Institute for Fluid Dynamics, 2005, April 11 - 15, 2005, VKI LS 2005-06

BUNKER, R.S & ARTS, T.

Film cooling science and technology for gas turbines: state-of-the-art experimental and computational knowledge

Edited by the von Karman Institute for Fluid Dynamics, 2007, April 16-20, 2007, VKI LS 2007-06

COLETTI, F.; FACCHINETTI, E.; ARTS, T.

Effect of inclined ribs on the aero-thermal performance of a trailing edge cavity with crossing jets

In 8th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics, Edited by F. Heitmeir, F. Martelli, M. Manna, 2009, ISBN 978-3-85125-036-7

VKI RP 2009-61

HOFER, T.; LEGRAND, M.; PONS, L.; ARTS, T.

Aerodynamic investigation of the leakage flow for a blade with a squealer tip at transonic conditions

In 8th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics, Edited by F. Heitmeir, F. Martelli, M. Manna, 2009, ISBN 978-3-85125-036-7

VKI RP 2009-70

COLETTI, F. & ARTS, T.

Internal cooling in turbomachinery

Edited by the von Karman Institute for Fluid Dynamics, 2010, May 3-6, 2010, ISBN 978-2-87516-006-5, VKI LS 2010-05

COLETTI, F. & ARTS, T.

Aerodynamic investigation of a rotating rib-roughened channel by means of time-resolved PIV

The 9th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics (ETC 9), Istanbul, Turkey, March 21-25, 2011, ISBN 978-975-561-389-5

VKI RP 2011-23

MESBAH, M.; ARTS, T.; SIMON, J.-F.; GEUZAIN, P.

Numerical and experimental analysis of weld joint effects for compressor blades

The 9th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics (ETC 9), Istanbul, Turkey, March 21-25, 2011, ISBN 978-975-561-389-5

VKI RP 2011-25

VASS, P. & ARTS, T.

Numerical investigation of high-pressure turbine blade tip-flows - Analysis of aerodynamics

The 9th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics (ETC 9), Istanbul, Turkey, March 21-25, 2011, ISBN 978-975-561-389-5

VKI RP 2011-26

MICHALEK, J.; ILLIKAN, A.; ARTS, T.

A comparison of high and low speed aerodynamic performance of a very high lift low pressure turbine airfoil (T108) at low Reynolds numbers: experimental analysis and numerical prediction

The 9th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics (ETC 9), Istanbul, Turkey, March 21-25, 2011, ISBN 978-975-561-389-5

VKI RP 2011-28

JANSSENS, B.; BANYAI, T.; BOSSCHAERTS, W.; LIMAM, K.; ARTS, T. : Discretization of the Incompressible Navier-Stokes Equations using a Domain Specific

Embedded Language

9th National Congress on Theoretical and Applied Mechanics, Brussels, Belgium,

May 9-11, 2012, VKI RP 2012-49

VKI RP 2012-56

SAHIN, F.C. & ARTS, T.

Experimental investigations on the effects of low profile vortex generators in a compressor cascade

9th National Congress on Theoretical and Applied Mechanics, Brussels, Belgium,

May 9-11, 2012, ISBN 978-2-8052-0151-6

Archival Journals

ARTS, T.

On the consistency of four different control surfaces used for finite area blade to blade flow calculations.

Int. J. Numerical Methods in Fluids, Vol. 4, 1984, pp 1083-1095

VKI Preprint 1983-07

CAMCI, C. & ARTS, T.

Experimental heat transfer investigation around the leading edge of a high pressure gas turbine rotor blade.

J. of Engrg. for Gas Turbines & Power (ASME), Vol. 107, No 4, Oct. 1985, pp 1016-1021

VKI Preprint 1984-32

CAMCI, C. & ARTS, T.

Short duration measurements and numerical simulation of heat transfer along the suction side of a film cooled gas turbine blade.

J. of Engrg. for Gas Turbines & Power (ASME), Vol. 107, No 4, Oct. 1985, pp 991-997

VKI Preprint 1984-33

ARTS, T.

Effects of tip endwall contouring on the 3D flowfield in an annular turbine nozzle guide vane. II - Numerical investigation.

J. of Engrg. for Gas Turbines & Power (ASME), Vol. 108, No 2, April 1986, pp 425-428

VKI Preprint 1984-31

ARTS, T.

Calcul de l'écoulement 3D, stationnaire, adiabatique, transsonique d'un fluide parfait non visqueux dans une grille d'aubes annulaire.

Revue "M", Vol. 30, Nos 3/4, Mars 1987, pp 119-129

VKI Preprint 1985-14

CAMCI, C. & ARTS, T.

An experimental convective heat transfer investigation around a film cooled gas turbine blade.

J. of Turbomachinery (ASME), Vol. 112, No 3, July 1990, pp 497-503

VKI Preprint 1988-03

ARTS, T. & BOURGUIGNON, A.E.

Behaviour of a two rows of holes coolant film along the pressure side of a high pressure nozzle guide vane.

J. of Turbomachinery (ASME), Vol. 112, No 3, July 1990, p 512

VKI Preprint 1989-09

CAMCI, C. & ARTS, T.

Effect of incidence on wall heating rates and aerodynamics on a film cooled transonic turbine blade.

J. of Turbomachinery (ASME), Vol. 113, No 3, July 1991, pp 493-501

VKI Preprint 1990-22

ARTS, T. & LAMBERT de ROUVROIT, M.

Aero-thermal performance of a 2D highly loaded transonic turbine nozzle guide vane : A test case for inviscid and viscous flow computations.

J. of Turbomachinery (ASME), Vol. 114, No 1, 1992, pp 147-154

VKI Preprint 1990-02

ARTS, T. & LAGRANGE, J.P.

3D aero-thermal characteristics of a high pressure turbine nozzle guide vane.

Revue Française de Mécanique 1992-3, p 393

VKI Preprint 1993-01

ARTS, T.

Thermal investigation of a highly loaded transonic turbine film cooled guide vane.

VDI Berichte No 1186, March 1995

VKI Preprint 1995-11

HEIDER, R. & ARTS, T.

© von Karman Institute for Fluid Dynamics

Performances aérodynamiques et thermiques d'un distributeur de turbine tridimensionnel, annulaire, transsonique.

Validation d'un code Navier-Stokes 3D.

Revue Scientifique SNECMA, No 6, June 1995, pp 39-47

VKI Preprint 1995-34

SIEVERDING, C.H.; ARTS, T.; DENOS, R.; MARTELLI, F.

Investigation of the flow field downstream of a transonic trailing edge cooled nozzle guide vane.

J. of Turbomachinery (ASME), Vol 118, pp 291-300, April 1996

VKI RP 1996-56

RAU, G.; ÇAKAN, M.; MOELLER, D.; ARTS, T.

The effect of periodic ribs on the local aerodynamic and heat transfer performance of a straight cooling channel.

J. of Turbomachinery (ASME), Vol. 120, No 2, pp 368-375, April 1998

VKI Preprint

ARTS, T.; RAU, G.; ÇAKAN, M.; VIALONGA, J. FERNANDEZ, D.; TARNOWSKI, F.; LAROCHE, E.

Experimental and numerical investigation on flow and heat transfer in large scale, turbine cooling representative, rib roughened channels.

Proc. Instn. Mech. Engrs, Vol 211, Part A, 1997, pp 263-272, January 1997

VKI RP 1997-04

ARTS, T.; DUBOUE, J.-M.; ROLLIN, G.

Aero-thermal performance measurements and analysis of a two-dimensional high turning rotor blade.

J. of Turbomachinery (ASME), Vol. 120, No 3, pp 494-499, July 1998

VKI RP 1997-07

MICHELASSI, V.; MARTELLI, F.; DÉNOS, R.; ARTS, T.; SIEVERDING, C.H.

Unsteady heat transfer in stator-rotor interaction by two equation turbulence model.

J. of Turbomachinery (ASME), Vol. 121, No 3, pp 436-447, July 1999

VKI RP 1999-54

ARTS, T. & VAN DEN BRAEMBUSSCHE, R.

Selected Turbomachinery Research Topics at the von Karman Institute

Ercofac Bulletin, No 42, September 1999, pp 6-10

VKI RP 1999-68

DENOS, R.; SIEVERDING, C.H.; ARTS, T.; BROUCKAERT, J.F.; PANIAGUA, G.; MICHELASSI, V.

Experimental investigation of the unsteady rotor aerodynamics of a transonic turbine stage

Proc. Instn. Mech. Engrs, Vol 213 ,No A4, pp 327-338, 1999

VKI – RP 1999-53

SIEVERDING, C.H.; ARTS, T.; DÉNOS, R.; BROUCKAERT, J.-F.

Measurement techniques for unsteady flows in turbomachines.

Experiments in Fluids, Vol. 28, No 4, April 2000, pp 285-321

VKI RP 2000-24

DENOS, R.; ARTS, T.; PANIAGUA, G.; MICHELASSI, V.; MARTELLI, F.

Investigation of the unsteady rotor aerodynamics in a transonic turbine stage

J. of Turbomachinery (ASME), Vol 123, No 1, pp 81-89, January 2001

VKI RP 2000-20

COTON, T.; ARTS, T.; LEFÈBVRE, M.

Effects of Reynolds and Mach number on the profile losses of a conventional low pressure rotor cascade with increasing pitch to chord ratio

IMECHE Journal of Power and Energy, 2001, Vol. 215, pp. 763-772

VKI RP 2001-08

PANIAGUA, G.; DENOS, R.; ARTS, T.

Steady-unsteady measurements of the flow field downstream of a transonic HP turbine stage

IMECHE Journal of Power and Energy, 2001, Vol. 215, pp. 663-673

VKI RP 2001-09

ARTS, T.

Film cooling: What did we learn from our measurements?

In "Heat transfer in gas turbine systems", Annals of the New York academy of science, 2001, Vol. 934, pp 126-134
VKI RP 2001-33

DIDIER, F.; DENOS, R.; ARTS, T.

Unsteady rotor heat transfer in a transonic turbine stage

Asme Paper GT-2002-30195, ASME Turbo Expo 2002, Amsterdam, The Netherlands, June 3-6, 2002

J. of Turbomachinery (ASME), Vol 124, No 4, pp 614-622, October 2002

VKI RP 2002-05

COTON, T.; ARTS, T.; LEFEBVRE, M.; LIAMIS, N.

Unsteady and calming effects investigation on a very high lift LP turbine blade –

Part I : experimental analysis

Asme Paper GT-2002-30227, ASME Turbo Expo 2002, Amsterdam, The Netherlands, June 3-6, 2002

J. of Turbomachinery (ASME), Vol 125, No 2, pp 281-290, April 2003

VKI RP 2002-01

HALAMA, J.; ARTS, T.; FORT, J.

Numerical solution of steady and unsteady transonic flow in turbine cascades and stages

Computers & Fluids, Volume 33, Issues 5-6, June - July 2004, pp. 729-740

VKI RP 2004-04

HOUTERMANS, R.; COTON, T.; ARTS, T.

Aerodynamic performance of a very high lift LP turbine blade with emphasis on separation prediction

Asme Paper GT-2003-38802, ASME Turbo Expo 2003, Atlanta, USA

Journal of Turbomachinery, Vol.126, Issue 3, July 2004, pp. 406-413

VKI RP 2003-37

FEDRIZZI, R. & ARTS, T.

Determination of the conjugate heat transfer performance of a turbine blade cooling channel

Quantitative Infra Red Thermography Journal, Vol 1, No 1, 2004

VKI RP 2004-52

ILIOPOULOU, V.; DENOS, R.; BILLIARD, N. ; ARTS, T.

Time-averaged and time-resolved heat flux measurements on a turbine stator blade using two-layered thin-film gauges

ASME Paper GT-2004-53437, ASME Turbo Expo 2004, Vienna, Austria

J. of Turbomachinery (ASME), Vol 126, No 4, pp 570-577, October 2004

VKI RP 2004-16

ILIOPOULOU, V.; DENOS, R.; BILLIARD, N. ; ARTS, T.

Time-averaged and time-resolved heat flux measurements on a turbine stator blade using two-layered thin-film gauges

ASME Paper GT-2004-53437, ASME Turbo Expo 2004, Vienna, Austria

Journal of Turbomachinery, Vol.126, October 2004, pp 571-577

VKI RP 2004-16

CASARSA, L. & ARTS, T.

Experimental investigation of the aero-thermal performance of a high blockage rib-roughened cooling channel

J. of Turbomachinery (ASME), Vol 127, pp 580-588, July 2005

VKI RP 2005-75

ILIOPOULOU, V. & ARTS, T.

The dual thin-film probe for high frequency flow temperature measurements

IMECHE Journal of Power and Energy, 2005, Vol. 219, No A6, pp. 461-470

VKI RP 2005-25

KEY, N. & ARTS, T.

Comparison of turbine tip leakage flow for flat tip and squealer tip geometries at high-speed conditions

Journal of Turbomachinery, April 2006, Vol.128, N°2, pp 213-220

VKI RP 2004-33

ARMELLINI, A.; COLETTI, F.; ARTS, T.; SCHOLTES, CH. : Aerothermal investigation of a rib-roughened trailing edge channel with crossing-jets - Part I: Flow field analysis
Journal of Turbomachinery, Vol. 132, Issue 1, January 2010, Paper 011009
VKI RP 2010-01

AMARAL, S.; VERSTRAETE, T.; VAN DEN BRAEMBUSSCHE, R.A.; ARTS, T.
Design and optimization of the internal cooling channels of a HP turbine blade - Part I: Methodology
Journal of Turbomachinery, April 2010, vol. 132, Issue 2, 021013
VKI RP 2008-14

VERSTRAETE, T.; AMARAL, S.; VAN DEN BRAEMBUSSCHE, R.A.; ARTS, T.
Design and optimization of the internal cooling channels of a HP turbine blade - Part II: Optimization
Journal of Turbomachinery, April 2010, vol. 132, Issue 2, 021014
VKI RP 2008-15

COLETTI, F.; ARMELLINI, A.; ARTS, T.; SCHOLTES, CH.
Aero-thermal investigation of a rib-roughened trailing edge channel with crossing-jets - Part II: Heat transfer analysis
Journal of Turbomachinery, Vol.133, Issue 3, published online today, 7 December 2010, doi:10.1115/1.4002425
VKI RP 2008-17

COLETTI, F.; SCIALANGA, M.; ARTS, T.
Experimental investigation of conjugate heat transfer in a rib-roughened trailing edge channel with crossing-jets
Accepted for publication in Journal of Turbomachinery, 2011
VKI RP 2010-32

COLETTI, F.; ARMELLINI, A.; ARTS, T.
Aerothermal investigation of a rib-roughened trailing edge channel with crossing-jets - Part II: Heat transfer analysis
Journal of Turbomachinery, July 2011, Vol. 133, Issue 3, Paper 031024
VKI RP 2011-02

VASS, P. & ARTS, T.
Advanced aero-thermal investigation of high pressure turbine tip flows
Heat Transfer Research, 2011, Vol. 42, Issue 2, pp 165-180
VKI RP 2011-11

COLETTI, F.; MAURER, Th.; ARTS, T.; DI SANTE, A.: Flow field investigation in rotating rib-roughened channel by means of particle image velocimetry
Experiments in Fluids, Vol. 52, Issue 4, April 2012, pp 1043-1061
VKI RP 2010-57

CUKUREL, B.; SELCAN, C.; ARTS, T.
Color theory perception of steady wide band liquid crystal thermometry
Experimental Thermal and Fluid Science, Vol. 39, 2012, pp 112-122
VKI RP 2012-06

CUKUREL, B. & ARTS, T.:Local Heat Transfer Dependency on Thermal Boundary Condition in Ribbed Cooling Channel Geometries
Accepted for publication in Journal of Heat Transfer, 2012
VKI RP 2012-32

CUKUREL, B.; SELCAN, C.; ARTS, T.:Film Cooling Extraction Effects on the Aero Thermal Characteristics of Rib Roughened Cooling Channel Flow
Accepted for in Journal of Turbomachinery, 2012
VKI RP 2012-33

CUKUREL, B.; ACARER, S.; ARTS, T.
A Novel Perspective to High Speed Cross-Hotwire Calibration Methodology
Accepted for publication in Experiments in Fluids, EXIF-D-11-00304, 2012
VKI RP 2012-34

CUKUREL, B.; ARTS, T.; SELCAN, C.: Conjugate heat transfer characterization in cooling channels
Journal of Thermal Science, Volume 21, Number 3 (2012), 286-294,

DOI: 10.1007/s11630-012-0546-1

VKI RP 2012-50

BABAJEE, J. & ARTS, T.

Investigation of the laminar separation-induced transition on two low-pressure turbine rotor blades

Int. J. Engineering Systems Modelling and Simulation, 2013, Vol. 5, Nos 1/2/3

VKI RP 2013-17

Proceedings of Specialised Courses

ARTS, T.; DÉNOS R.; BROUCKAERT, J.F.

Hot wire anemometry

Temperature Measurements, VKI LS 1996-07, Rhode-St-Genèse, April 22-26, 1996

VKI RP 1996-57

DÉNOS, R.; ARTS, T.; SIEVERDING, C.H.

Cold wire anemometry

Temperature Measurements, VKI LS 1996-07, Rhode-St-Genèse, April 22-26, 1996

VKI RP 1996-58

SIEVERDING, C.H.; DÉNOS R.; ARTS, T.; BROUCKAERT, J.-F.; PANIAGUA, G.

Experimental investigation of the unsteady rotor aerodynamics and heat transfer of a transonic turbine stage

Blade Row Interference Effects in Axial Turbomachinery Stages, VKI LS 1998-02, Rhode-St-Genèse, Belgium,

February 9-12, 1998

VKI RP 1998-18

ARTS, T.

Aero-thermal performance of a high pressure turbine nozzle guide vane - TEST CASE TU02

Verification and Validation of Computational Fluid Dynamics, VKI LS 2000-08, Rhode-St-Genèse, Belgium, June 5-8, 2000

VKI RP 2000-49

COLETTI, F. & ARTS, T.: Experimental study of conjugate heat transfer in a rib-roughened trailing edge cooling channel with crossing-jets

VKI LS 2010-05, Internal Cooling in Turbomachinery, Rhode Saint Genèse, Belgium, May 3-6, 2010

VKI RP 2010-26

Meeting Papers

DECUYPERE, R. & ARTS, T.

Influence of the inlet conditions on the blade pressure distribution of a transonic steam turbine tip section.

Int. Symp. on Applications of Fluid Mechanics and Heat Transfer to Energy and Environmental Problems, Patras, June 1981

VKI Preprint 1981-26

ARTS, T.

Cascade flow calculations using a finite volume method.

VKI LS 1982-05 "Numerical Methods for Flows in Turbomachinery Bladings", April 1982

VKI Preprint 1982-12

DECUYPERE, R. & ARTS, T.

Some aspects concerning the use of a LDV

In Int. Symp. on Applications of LDA to Fluid Mechanics, Lisbon, Portugal, July 5-7, 1982

VKI Preprint 1982-30

DECUYPERE, R. & ARTS, T.

Optical methods for performance evaluation of 2D transonic turbine profiles in steam.

Proc. of the 6th Symp. on Measuring Techniques for Transonic and Supersonic Flows in Cascades and Turbomachines, Lyon, France, Oct 1981

VKI Preprint 1982-45

ARTS, T.

© von Karman Institute for Fluid Dynamics

Calculation of the 3D flow in the ultimate stator of a large steam turbine using a time marching method and a finite volume approach.

38th National Congress of the Associazione Termotecnica Italiana Bari, Sept 26-30, 1983

VKI Preprint 1983-23

ARTS, T.

3D rotational inviscid flow calculation.

VKI LS 1984-05 "Secondary Flows and Endwall Boundary Layers in Axial Turbomachines", May 1984

VKI Preprint 1984-09

ARTS, T. & CAU, G.

Short duration heat transfer measurements on simplified gas turbine components.

39 Congr. Naz. Dell'Associazione Termotecnica Italiana L'Aquila, Sept 1984

VKI Preprint 1984-19

ARTS, T.

Calculation of the 3D, steady, inviscid flow in a transonic axial turbine stage.

ASME Paper 84 GT 76

VKI Preprint 1984-24

ARTS, T. & CAU, G.

Short duration heat transfer measurements on simplified gas turbine components.

39° Congr. Nazionale ATI. L'Aquila, Sept. 12-14, 1984

VKI Preprint 1984-38

ARTS, T. & GRAHAM, C.G.

External heat transfer study on a turbine rotor blade.

AGARD CP 390 "Heat Transfer and Cooling in Gas Turbines", Bergen, Norway, May 6-10, 1985

VKI Preprint 1985-12

ARTS, T. & CAMCI, C.

Short duration heat transfer measurements.

VKI LS 1985-03 "Measurement Techniques in Turbomachines", Feb 1985

VKI Preprint 1985-13

CAMCI, C.; ARTS, T.; BREUGELMANS, F.A.E.

Experimental convective heat transfer investigation around a film cooled high pressure turbine blade.

7th Int. Symp. on Air Breathing Engines, Beijing, People's Republic of China, Sept 2-6, 1985

VKI Preprint 1985-15

BOSSCHAERTS, W.; SIEVERDING, C.H.; ARTS, T.

Comparison of two explicit Euler solvers with a hybrid approach to calculate transonic cascade flows with embedded shocks.

Int. Conf. on Turbomachinery "Efficiency Prediction and Improvement", Inst. Mech. Engrs, Cambridge, UK, 1987

VKI Preprint 1987-15

ARTS, T.

3D inviscid flow calculations in turbomachinery components.

16th ICAS Congress, Jerusalem, Aug. 28-Sept. 2, 1988

VKI Preprint 1988-27

SIEVERDING, C.H.; ARTS, T.; PASTEELS, M-H.

Transonic cascade performance measurements using a high speed probe traversing mechanism in a short duration wind tunnel.

Proc. of the 9th Symp. "Measuring Techniques for Transonic and Supersonic Flow in Cascades and Turbomachines", Oxford, UK, 1988

VKI Preprint 1988-30

ARTS, T. & BOURGUIGNON, A.E.

Behaviour of a two rows of holes coolant film along the pressure side of a high pressure nozzle guide vane.

ASME 34th Int. Gas Turbine and Aero-Engine Congress and Exposition, Toronto, Canada, June 1989

VKI Preprint 1989-09

GUYON, B. & ARTS, T.

Boundary layer calculation including the prediction of transition and curvature effects.

ASME 34th Int. Gas Turbine and Aero-Engine Congress and Exposition, Toronto, Canada, June 1989

VKI Preprint 1989-10

ARTS, T. ; LAMBERT de ROUVROIT M.; SIEVERDING, C.H.

Test case for inviscid and viscous flow computations.

VKI LS 1989-06 "Numerical Methods for Flows in Turbomachines", May 1989

VKI Preprint 1989-15

ARTS, T. & LAMBERT de ROUVROIT, M.

Aero-thermal performance of a 2D highly loaded transonic turbine nozzle guide vane : A test case for inviscid and viscous flow computations.

ASME 35th Int. Gas Turbine Congress and Exposition, Brussels, June 11-14, 1990.

VKI Preprint 1990-02

ARTS, T. & LAMBERT de ROUVROIT, M.

Performances thermiques et aerodynamiques d'un distributeur de turbine haute pression.

2ème Coll. National de Mécanique Théor. et Appl., Bruxelles, 17-18 mai 1990

VKI Preprint 1990-19

CAMCI, C. & ARTS, T.

Effect of incidence on wall heating rates and aerodynamics on a film cooled transonic turbine blade.

ASME Paper 90-GT-46, 35th IGTI, Brussels, Belgium, 1990

VKI Preprint 1990-22

ARTS, T.

Time marching finite volume techniques applied to turbomachinery.

"Advances in CFD", eds. W.G. Habashi & M.M. Hafez

VKI Preprint 1990-23

SIEVERDING, C.H. & ARTS, T.

Transonic and supersonic turbine cascades.

AGARDograph 328

VKI Preprint 1990-27

COSTA, J. & ARTS, T.

Boundary layer transition under the presence of discrete frequencies in the freestream turbulence spectrum.

ASME Paper 91-GT-xxxx, Orlando, Florida, June 1991

VKI Preprint 1991-01

ARTS, T.; OTTAVY, A.; JUNKHAN, G.

Surface temperature measurements by use of liquid crystals.

Proc. of the 10th Symp. "Measuring Techniques for Transonic and Supersonic Flows in Cascades and Turbomachines", von Karman Institute, Belgium, 1990

VKI Preprint 1991-09

COSTA, J. & ARTS, T.

The influence of freestream turbulence spectrum on boundary layer transition.

10th Int. Symp. on Air Breathing Engines, Nottingham, UK, 1-6 Sept 1991

VKI Preprint 1991-20

BUCHLIN, J-M. & ARTS, T.

Mesure de températures de surface par cristaux liquides et thermographie infrarouge.

Société Belge des Mécaniciens, Journées d'Etudes et Exposition, Bruxelles, 16-17 Oct 1991

VKI Preprint 1991-31

COSTA, J. & ARTS, T.

Boundary layer transition under the presence of discrete frequencies in the freestream turbulence spectrum.

VKI Lecture Series 1991-06 "Boundary Layers in Turbomachines", Sept 2-6, 1991

© von Karman Institute for Fluid Dynamics

VKI Preprint 1991-32

SIEVERDING, C.H. & ARTS, T.

The VKI compression tube annular cascade facility CT3.

ASME Paper 92-GT-xxxx, Kln, Germany, June 1-4, 1992

VKI Preprint 1992-01

ARTS, T.; LAMBERT de ROUVROIT, M.; RAU, G.; ACTON, P.

Aero-thermal investigation of the flow developing in a 180 degree turn channel.

Int. Symp. 'Heat Transfer in Turbomachinery', Athens, Greece, August 24-28, 1992

VKI Preprint 1992-10

ARTS, T. & LAPIDUS, I.

Thermal effects of a coolant film along the section side of a high pressure turbine nozzle guide vane.

AGARD Symp. on Heat Transfer and Cooling in Gas Turbines, Antalya, Turkey, Oct 12-16, 1992. AGARD CP 527, Paper 3.

VKI Preprint 1992-19

LOPEZ-PENA, F. & ARTS, T.

On the development of a film cooling layer.

AGARD Symp. on Heat Transfer and Cooling in Gas Turbines, Antalya, Turkey, Oct 12-16, 1992. AGARD CP 527, Paper 36

VKI Preprint 1992-36

ARTS, T. & LAGRANGE, J.P.

3D aero-thermal characteristics of a high pressure turbine nozzle guide vane.

Int. Symp. on Recent Adv. in Compressor and Turbine Aerothermodyn., Paris, France, Nov 24-25, 1992.

VKI Preprint 1993-01

RAU, G.; VANHALST, J.; ARTS, T.

The application of liquid crystal techniques to determine heat transfer rates.

VKI LS 1993-05 "Measurement Techniques", April 19-23, 1993

VKI Preprint 1993-12

RAU, G. & ARTS, T.

Aerodynamic investigation of the flow field in a 180 degree turn channel with sharp bend.

AGARD 73rd Fluid Dynamics Panel Symposium on Wall Interference and Flow Field Measurements, Brussels, Oct 4-7, 1993

VKI Preprint 1994-04

ARTS, T.

Two dimensional highly loaded transonic turbine cooled nozzle guide vane. Test case No 2

in *VKI LS 1994-06 "Numerical Methods for Flow Calculation in Turbomachines", May 15-20, 1994*

ARTS, T.

Détermination expérimentale des performances aéro-thermiques d'une grille d'aubes annulaire en régime transsonique.

IIIème Congrès National de Mécanique Théorique et Appliquée, Bruxelles, 30-31 mai, 1994

VKI Preprint 1994-13

ARTS, T.; THIBAUT, D.; VAN KALMTHOUT, E.

Etude thermique de l'écoulement dans un canal avec un coude brusque à 180 degrés.

IIIème Congrès National de Mécanique Théorique et Appliquée, Bruxelles, 30-31 mai, 1994

VKI Preprint 1994-16

SIEVERDING, C.H.; ARTS, T.; DENOS, R.; MARTELLI, F.

Investigation of the flow field downstream of a transonic trailing edge cooled nozzle guide vane.

ASME Gas Turbine Conference, ASME Paper 94-GT-xxxx, Den Haag, June 13-16, 1994

VKI Preprint 1994-06

ARTS, T. & HEIDER, R.

Aerodynamic and thermal performance of a 3D annular transonic nozzle guide vane. Part 1 - Experimental investigation.

Publications of T. Arts

30th AIAA/ASME/SAE/ASEE Joint Propulsion Conf., Indianapolis, IN, USA, June 27-29, 1994. AIAA Paper 94-2929
VKI Preprint 1994-31

HEIDER, R. & ARTS, T.

Aerodynamic and thermal performance of a 3D dimensional annular transonic nozzle guide vane. Part 2 - Assessment of a 3D Navier-Stokes solver.

30th AIAA/ASME/SAE/ASEE Joint Propulsion Conf., Indianapolis, IN, USA, June 27-29, 1994. AIAA Paper 94-2930
VKI Preprint 1994-32

LOPEZ-PENA, F. & ARTS, T.

The rotating slanted hot wire anemometer in practical use.

International Conference on Experimental Fluid Mechanics, Torino, Italy, July 1994

LOPEZ-PENA, F. & ARTS, T.

An inclined turbulent jet into a cross-flow of lower density.

7th International Symposium on Applications of Laser Techniques to Fluid Mechanics, Lisboa, Portugal, July 1994

ARTS, T.

Comportements aérodynamiques et thermiques d'un stator bidimensionnel de turbine à gaz en l'absence et en présence de refroidissement par film.

Société Française des Thermiciens

Journée d'Etudes organisée par la Section "Convection", Paris, France, November 1994

VKI Preprint 1995-05

ARTS, T.

Thermal investigation of a highly loaded transonic turbine film cooled guide vane.

1st European Conf. Turbomachinery - Fluid Dynamic & Thermodynamic Aspects, Erlangen, Germany, March 1995
VKI Preprint 1995-11

LEFEBVRE, M. & ARTS, T.

Numerical simulation of laminar/turbulent flows in a HP turbine linear cascade using unstructured grids

Seminar and Workshop on 3D Turbomachinery Flow Prediction IV, Courchevel, France, January 1996

ARTS, T.; DENOS, R.; BROUCKAERT, J.-F.

Hot wire thermometry

VKI Lecture Series on "Temperature Measurements", April 1996

DENOS, R.; ARTS, T.; SIEVERDING, C.H.

Cold wire thermometry

VKI Lecture Series on "Temperature Measurements", April 1996

RAU, G.; ÇAKAN, M.; MOELLER, D.; ARTS, T.

The effect of periodic ribs on the local aerodynamic and heat transfer performance of a straight cooling channel.

1996 ASME Turbo Expo Conference, ASME Paper 96-GT-541, Birmingham, UK, June 1996

VKI Preprint 1996-11

BATTISTI, L. & ARTS, T.

Wall heat transfer measurements in rib-roughened cooling channels by means of a transient technique

ATI 51 Congresso, Udine, Italy, September 1996

ARTS, T.; DENOS, R.; BROUCKAERT, J.-F.; POPP, O.

The dual hot wire aspirating probe.

Symposium on Measuring Techniques for Transonic and Supersonic Flows in Cascades and Turbomachines, Zürich, September 1996

VKI RP 1996-66

LEFEBVRE, M. & ARTS, T.

Numerical aero-thermal prediction of laminar/turbulent flows in a two-dimensional high pressure turbine linear cascade.

Second European Conference on Turbomachinery - Fluid Dynamics and Thermodynamics, Antwerp, Belgium, March 1997, pp 401-409

VKI RP 1997-03

© von Karman Institute for Fluid Dynamics

ARTS, T.; RAU, G.; ÇAKAN, M.; VIALONGA, J. FERNANDEZ, D.; TARNOWSKI, F.; LAROCHE, E.
Experimental and numerical investigation on flow and heat transfer in large scale, turbine cooling representative, rib
roughened channels.
Second European Conference on Turbomachinery - Fluid Dynamics and Thermodynamics, Antwerp, Belgium, March
1997, pp 453-461
VKI RP 1997-04

ÇAKAN, M. & ARTS, T.
Effet de la hauteur des pontets sur le transfert de chaleur par convection dans un canal interne de refroidissement.
Congrès Français de Thermique, SFT '97, Toulouse, France, May 1997
VKI RP 1997-73

ARTS, T.; SIEVERDING, C.H.; DENOS, R.
Le nouveau banc d'essais de turbines haute vitesse de l'IVK pour l'étude d'écoulements instationnaires.
4th National Congress on Theoretical and Applied Mechanics, Leuven, Belgium, May 1997
VKI RP 1997-18

ARTS, T.; DUBOUE, J.-M.; ROLLIN, G.
Aero-thermal performance measurements and analysis of a two-dimensional high turning rotor blade.
1997 ASME Turbo Expo Conference, ASME Paper 97-GT-120, Orlando, Florida, USA, June 1997
VKI RP 1997-07

RAU, G. & ARTS, T.
Local interference effect in a straight square channel with two opposite rib-roughened walls as a function of rib height
to hydraulic diameter ratio.
4th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, ExHFT 4, Brussels,
Belgium, June 1997.
VKI RP 1997-06

PELLE, O. & ARTS, T.
Development of a double-layer thin film gauge for surface heat transfer measurements.
Eurotherm Seminar 55, "Heat Transfer in Single Phase Flows 5", Santorini, Greece, September 1997
VKI RP 1997-46

ÇAKAN, M. & ARTS, T.
Effect of rib height on heat transfer enhancement in a cooling channel.
Eurotherm Seminar 55, "Heat Transfer in Single Phase Flows 5", Santorini, Greece, September 1997
VKI RP 1997-47

SIEVERDING, C.H.; DÉNOS, R.; ARTS, T.; BROUCKAERT, J.-F.; PANIAGUA, G.
Experimental investigation of the unsteady rotor aerodynamics and heat transfer of a transonic turbine stage.
VKI LS 1998-02 "Blade Row Interference Effects in Axial Turbomachinery Stages", February 9-12, 1998.
VKI RP 1998-18

SIEVERDING, C.H.; ARTS, T.; DÉNOS, R.; BROUCKAERT, J.-F.
Measurement techniques for unsteady flows in turbomachines.
International Gas Turbine & Aeroengine Congress & Exhibition, Stockholm, Sweden, June 2-5, 1998.
VKI RP 1998-42

MICHELASSI, V.; MARTELLI, F.; DÉNOS, R.; ARTS, T.; SIEVERDING, C.H.
Unsteady heat transfer in stator-rotor interaction by two equation turbulence model.
International Gas Turbine & Aeroengine Congress & Exhibition, Stockholm, Sweden, June 2-5, 1998.
ASME 98GT243
VKI RP 1998-50

DENOS, R.; SIEVERDING, C.H.; ARTS, T.; BROUCKAERT, J.F.; PANIAGUA, G.; MICHELASSI, V.
Experimental investigation of the unsteady rotor aerodynamics of a transonic turbine stage
Third European Conference on Turbomachinery - Fluid Dynamics and Thermodynamics, March 1999, London, United
Kingdom
VKI RP 1999-53

ÇAKAN, M. & ARTS, T.

Effect of main and secondary flows on heat transfer in a rib-roughened internal cooling channel

4th Internal Symposium on Experimental and Computational Aero-Thermodynamics of Internal Flows, Dresden, Germany, August 31- September 2, 1999

VKI RP 1999-42

DENOS, R.; ARTS, T.; PANIAGUA, G.; MICHELETTI, V.; MARTELLI, F.

Investigation of the unsteady rotor aerodynamics in a transonic turbine stage

International Gas Turbine & Aeroengine Congress & Exhibition, Munich, Germany, May 8-11, 2000.

ASME 2000-GT-0435

VKI RP 2000-20

ARTS, T.

Aero-thermal performance of a high pressure turbine nozzle guide vane – TEST CASE TU02

Verification and Validation of Computational Fluid Dynamics, VKI Lecture Series 2000-08, Rhode Saint Genèse, Belgium, June 5-8, 2000

VKI RP 2000-49

ARTS, T.:

Film cooling: What did we learn from our measurements?

Cesme, Turkey, August 2000

VKI RP 2001-33

COTON, T.; ARTS, T.; LEFEBVRE, M.

Effects of Reynolds and Mach number on the profile losses of a conventional low pressure rotor cascade with increasing pitch to chord ratio

4th European Conference on Turbomachinery, Fluid Dynamics and Thermodynamics

Firenze, Italy, March 20-23, 2001

VKI RP 2001-08

PANIAGUA, G.; DENOS, R.; ARTS, T.

Steady-unsteady measurements of the flow field downstream of a transonic HP turbine stage

4th European Conference on Turbomachinery, Fluid Dynamics and Thermodynamics

Firenze, Italy, March 20-23, 2001

VKI RP 2001-09

ARTS, T; ABAD LOZANO, M.T.; KINOUE, Y.; PIERRET, S.

The unsteady temperature field in a turbine blade cooling channel

RTA/AVT Applied Vehicle Technology Panel, Loen, Norway, May 7-11, 2001

VKI RP 2001-30

HALAMA, J.; ARTS, T.

Numerical simulation of unsteady stator-rotor interaction

4th seminar on “Euler and Navier-Stokes equations”, Prague, Czech Republic, May 23-25, 2001,

ISBN 80-85918-65-X

VKI RP 2001-45

KINOUE, Y.; ARTS, T.; ABAD-LOZANO, M.T.; PIERRET, S.; SETOGUCHI, T.; KANEKO, K.

The unsteady temperature field in a high-blockage ribbed channel

The 16th Annual Gas Turbine Conference of GTSJ (Gas Turbine Society of Japan), Akita, Japan, 2001

In Japanese

VKI RP 2001-60

DIETTE, C. & ARTS, T.

Application de la thermographie par cristaux liquides dans les cavités de refroidissement d'aubes de turbines

Techniques Expérimentales en Convection, Société Française de Thermique, Journée d'Etudes, Paris, France, 27 Mars

2002

VKI RP 2002-21

CASARSA, L.; ÇAKAN, M.; ARTS, T.

Characterization of the velocity and heat transfer fields in an internal cooling channel with high blockage ratio

© von Karman Institute for Fluid Dynamics

Asme Paper GT-2002-30207, ASME Turbo Expo 2002, Amsterdam, The Netherlands, June 3-6, 2002
VKI RP 2002-03

COTON, T.; ARTS, T.; LEFEBVRE, M.; LIAMIS, N.
Unsteady and calming effects investigation on a very high lift LP turbine blade – Part I : experimental analysis
Asme Paper GT-2002-30227, ASME Turbo Expo 2002, Amsterdam, The Netherlands, June 3-6, 2002
VKI RP 2002-01

VALENTI, E.; HALAMA, J.; DENOS, R.; ARTS, T.
Investigation of the 3D unsteady rotor pressure field in a HP turbine stage
Asme Paper GT-2002-30365, ASME Turbo Expo 2002, Amsterdam, The Netherlands, June 3-6, 2002
VKI RP 2002-06

DIDIER, F.; DENOS, R.; ARTS, T.
Unsteady rotor heat transfer in a transonic turbine stage
Asme Paper GT-2002-30195, ASME Turbo Expo 2002, Amsterdam, The Netherlands, June 3-6, 2002
VKI RP 2002-05

CASARSA, L. & ARTS, T.
Aerodynamic performance investigation of a rib-roughened cooling channel flow with high blockage ratio
11th International Symposium on Application of Laser Techniques to Fluid Mechanics, Lisbon, Portugal, 8-11 July 2002.
VKI RP 2002-38

DIETTE, C.; ARTS, T.; BRISSET, C.; DEJEU, C.
Influence of film cooling holes on heat transfer in a rib-roughened channel of triangular cross section
ESDA2002/ATF-046, 6th Biennal Conference on Engineering Systems Design and Analysis, Istanbul, Turkey, July 8-11, 2002
VKI RP 2002-16

ILIOPOULOU, V. & ARTS, T.
Applications of the heat flux thin film sensor in short duration flows
ESDA2002/ATF-040, 6th Biennal Conference on Engineering Systems Design and Analysis, Istanbul, Turkey, July 8-11, 2002
VKI RP 2002-41

CASARSA, L. & ARTS, T.
Experimental analysis of the velocity field inside a turbine blade cooling channel by means of particle image velocimetry
57^o Congresso Nazionale ATI, Pisa, Italy, September 2002
VKI RP 2002-42

CASARSA, L. & ARTS, T.
Aero-thermal performance investigation of an internal cooling channel with high blockage ratio
5th European Conference on Turbomachinery, Fluid Dynamics and Thermodynamics
Praha, Czech Republic, March 17-22, 2003
VKI RP 2003-72

HOUTERMANS, R.; COTON, T.; ARTS, T.
Aerodynamic performance of a very high lift LP turbine blade with emphasis on separation prediction
ASME Paper GT-2003-38802, ASME Turbo Expo 2003, Atlanta, USA
VKI RP 2003-37

FEDRIZZI, R. & ARTS, T.
Investigation of the conjugate convective-conductive thermal behavior of a rib-roughened internal cooling channel
ASME Paper GT-2004-53046, ASME Turbo Expo 2004, Vienna, Austria
VKI RP 2004-29

DIETTE, C.; ARTS, T.; SGARZI, O.; LAROCHE, E.
Investigation of a high aspect ratio rectangular channel with high blockage ratio round corner ribs
ASME Paper GT-2004-53163, ASME Turbo Expo 2004, Vienna, Austria
VKI RP 2004-27

COTON, T. & ARTS, T.

Investigation of a high lift LP turbine blade submitted to passing wakes.

Part 1 : Profile loss and heat transfer

ASME Paper GT-2004-53768, ASME Turbo Expo 2004, Vienna, Austria

VKI RP 2004-31

COTON, T. & ARTS, T.

Investigation of a high lift LP turbine blade submitted to passing wakes.

Part 2 : Boundary layer transition

ASME Paper GT-2004-53781, ASME Turbo Expo 2004, Vienna, Austria

VKI RP 2004-32

KEY, N. & ARTS, T.

Comparison of turbine tip leakage flow for flat tip and squealer tip geometries at high-speed conditions

ASME Paper GT-2004-53979, ASME Turbo Expo 2004, Vienna, Austria

Accepted for transactions

VKI RP 2004-33

KUWABARA, M.; TSUKAGOSHI, K.; ARTS, T.

High coverage blade tip film cooling

ASME Paper GT-2004-53226, ASME Turbo Expo 2004, Vienna, Austria

VKI RP 2004-30

GARCIA CASADO, R.; THIERRY, M.; FEDRIZZI, R.; DI SANTE, A.; ARTS, T.

PIV Investigation of internal cooling channels for gas turbines, with 45 degrees inclined ribs

12th International Symposium on Application of Laser Techniques to Fluid Mechanics, Lisbon, Portugal, July 2004.

VKI RP 2004-63

GARCIA CASADO, R. & ARTS, T.

Caractérisation par la PIV de l'écoulement dans les canaux de refroidissement internes de turbines à gaz

9^{ème} Congrès Francophone de Vélocimétrie Laser, Bruxelles, Belgique, 14-17 Septembre 2004

VKI RP 2004-42

ARTS, T.; GINIBRE, P.; OKSUZ, O.; ILIOPOULOU, V.; KEY, N.

Comparison of turbine tip leakage aero thermal flows for flat tip and squealer tip geometries at high-speed conditions -

Experimental and numerical investigation

6th European Conference on Turbomachinery: Fluid Dynamics and Thermodynamics, Lille, France, March 7-11, 2005

VKI RP 2005-22

PHIBEL, R.; LAROCHE, E.; CASARSA, L.; ARTS, T.

Numerical investigation on flow and heat transfer in a rib-roughened channel with high blockage ratio

6th European Conference on Turbomachinery: Fluid Dynamics and Thermodynamics, Lille, France, March 7-11, 2005

VKI RP 2005-24

ILIOPOULOU, V. & ARTS, T.

The dual thin-film probe for high frequency flow temperature measurements

6th European Conference on Turbomachinery: Fluid Dynamics and Thermodynamics, Lille, France, March 7-11, 2005

Accepted for transactions

VKI RP 2005-25

AGOSTINI, F. & ARTS, T.

Conjugate heat transfer investigation of a rib-roughened cooling channel

ASME Paper GT-2005-68166, ASME Turbo Expo 2005, Reno, USA

VKI RP 2005-66

VASS, P.; RAMBAUD, P.; ARTS, T.; BENOCCI, C.

: Numerical investigation of flow and heat transfer in a

ribbed square duct applying LES

7th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics, Athens, Greece, March 5-9, 2007

VKI RP 2007-29

CASARSA, L. & ARTS, T.: Combined heat transfer and flow fields analysis in rib-roughened cooling passages for turbine blades
7th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics, Athens, Greece, March 5-9, 2007
VKI RP 2007-30

ARTS, T.; BENOCCI, C.; RAMBAUD, P.: Experimental and numerical investigation of flow and heat transfer in a ribbed square duct
3rd International Symposium on Integrating CFD and Experiments in Aerodynamics, U.S. Air Force Academy, CO, USA, June 20-21 2007
VKI RP 2007-36

AMARAL, S.; VERSTRAETE, T.; VAN DEN BRAEMBUSSCHE, R.A.; ARTS, T.: Design and optimization of the internal cooling channels of a HP turbine blade - Part I: Methodology
ASME Turbo Expo 2008: Power for Land, Sea and Air, Berlin, Germany, June 9-13, 2008, ASME GT2008-51077
VKI RP 2008-14

VERSTRAETE, T.; AMARAL, S.; VAN DEN BRAEMBUSSCHE, R.A.; ARTS, T.: Design and optimization of the internal cooling channels of a HP turbine blade - Part II: Optimization
ASME Turbo Expo 2008: Power for Land, Sea and Air, Berlin, Germany, June 9-13, 2008, ASME GT2008-51080
VKI RP 2008-15

ARMELLINI, A.; COLETTI, F.; ARTS, T.; SCHOLTES, CH. : Aero-thermal investigation of a rib-roughened trailing edge channel with crossing-jets - Part I: Flow field analysis
ASME Turbo Expo 2008: Power for Land, Sea and Air, Berlin, Germany, June 9-13, 2008, ASME GT2008-50694
VKI RP 2008-16

DI SANTE, A.; VAN DEN BRAEMBUSSCHE, R.A.; ARTS, T.: PIV measurements of the vortical structures in rotating channels
XIX Biannual Symposium on Measuring Techniques in Turbomachinery Transonic and Supersonic Flow in Cascades and Turbomachines, Sint Genesius Rode, Belgium, April 7-8, 2008
VKI RP 2008-32

COLETTI, F.; ARMELLINI, A.; ARTS, T.; SCHOLTES, CH. : Aero Thermal Investigation of a Rib-Roughened Trailing Edge Channel With Crossing-Jets: Part II — Heat Transfer Analysis
ASME Turbo Expo 2008, Power for Land, Sea and Air, Berlin, Germany, June 9-13, 2008 - ASME-GT2008-50695
VKI RP 2008-79

COLETTI, F.; ARMELLINI, A.; ARTS, T.; SCHOLTES, CH.: Aero-Thermal Investigation of a Rib-Roughened Trailing Edge Channel With Crossing-Jets: Part I — Flow Field Analysis
ASME Turbo Expo 2008, Power for Land, Sea and Air, Berlin, Germany, June 9-13, 2008 - ASME-GT2008-50694
VKI RP 2008-80

MESBAH, M.; ARTS, T.; SIMON, J.-F.; GEUZAIN, P. : Numerical and experimental analysis of surface roughness effects for compressor blades
ISABE 2009, 19th Conference of the International Society for Air Breathing Engines, September 7-11, 2009, Montréal, Québec, Canada
VKI RP 2009-33

HOFER, T. & ARTS, T.: Aerodynamic Investigation of the Tip Leakage Flow for Blades With Different Tip Squealer Geometries at Transonic Conditions
ASME TURBO EXPO 2009, June 8-12, 2009, Orlando, FL USA, GT2009-59909
VKI RP 2009-43

COLETTI, F.; SCIALANGA, M.; ARTS, T.: Conjugate heat transfer in a turbine blade internal cooling channel
8th National Congress on Theoretical and Applied Mechanics, May 28-29, Brussels, Belgium
VKI RP 2009-60

MICHALEK, J.; MONALDI, M.; ARTS, T.: Aerodynamic performance of a very high lift low pressure turbine airfoil (T106C) at low Reynolds and high Mach number with effect of free stream turbulence intensity
ASME Turbo Expo 2010: Power for Land, Sea and Air, June 14-18, 2010, Glasgow, United Kingdom, ASME GT2010-22884
VKI RP 2010-35

COLETTI, F.; MAURER, Th.; ARTS, T.

Etude de l'écoulement turbulent dans un canal en rotation à l'aide de la PIV résolue en temps

Congrès Francophone de Techniques Laser, CFTL 2010, Vandoeuvre-lès-Nancy, France, Septembre 14-17, 2010

VKI RP 2010-81

GOURDAIN, N.; GICQUEL, L.Y.M.; FRANSEN, R.; COLLADO, E.; ARTS, T.

Application of RANS and LES to the prediction of flows in high pressure turbine components

ASME Turbo Expo 2011: Power for Land, Sea and Air, June 6-10, 2011, Vancouver, Canada

ASME GT2011-46518

VKI RP 2011-13

COLETTI, F.; VERSTRAETE, T.; VANDERWIELEN, T.; BULLE, J.; ARTS, T.

Optimization of a U-bend for minimal pressure loss in internal cooling channels - Part II: Experimental validation

ASME Turbo Expo 2011: Power for Land, Sea and Air, June 6-10, 2011, Vancouver, Canada

ASME GT2011-46555

VKI RP 2011-20

VERSTRAETE, T.; COLETTI, F.; BULLE, J.; VANDERWIELEN, T.; ARTS, T.

Optimization of a U-bend for minimal pressure loss in internal cooling channels - Part I: Numerical method

ASME Turbo Expo 2011: Power for Land, Sea and Air, June 6-10, 2011, Vancouver, Canada

ASME GT2011-46541

VKI RP 2011-21

TAKAHASHI, T.; ARTS, T.; VERSTRAETE, T.; PRINSIER, J.: Benchmark simulation of RANS CFD for heat transfer evaluation on the VKI LS89 blade

International Gas Turbine Congress, Osaka, Japon, Novembre 13-18, 2011, IGTC2011-ABS-0198

VKI RP 2011-43

GOURDAIN, N.; GICQUEL, L.Y.M.; GOMAR, A.; FRANSEN, R.; COLLADO, E.; ARTS, T. : Application of RANS and LES to the prediction of complex flows in gas turbine components

46th Symposium of Applied Aerodynamics, AAAF 2011, Orléans, France, March 28-30, 2011

VKI RP 2011-60

COLETTI, F.; CRESCI, I.; ARTS, T. : Turbulent flow in rib-roughened channel under Coriolis and rotational buoyancy forces

10th International Symposium on Experimental Computational Aerothermodynamics of Internal Flows, ISAIF10, Brussels, Belgium, July 4-7, 2011

VKI RP 2011-97

NAKHLE, D.; RAMBAUD, P.; BENOCCI, C.; ARTS, T. :Numerical investigation of flow and heat transfer in ribbed square duct applying LES

10th International Symposium on Experimental Computational Aerothermodynamics of Internal Flows, ISAIF10, Brussels, Belgium, July 4-7, 2011

VKI RP 2011-100

SAHIN, C. & ARTS, T.: Numerical investigations on vortex generators with the purpose of a comparative data base

10th International Symposium on Experimental Computational Aerothermodynamics of Internal Flows, ISAIF10,

Brussels, Belgium, July 4-7, 2011

VKI RP 2011-102

CUKUREL, B.; ARTS, T.; SELCAN, C.: Conjugate heat transfer characterization in a ribbed cooling channel

10th International Symposium on Experimental Computational Aerothermodynamics of Internal Flows, ISAIF10, Brussels, Belgium, July 4-7, 2011

VKI RP 2011-103

COLETTI, F.; CRESCI, I.; ARTS, T. : Turbulent flow in rotating rib-roughened channel

Seventh International Symposium on Turbulence and Shear Flow Phenomena, TSFP-7, Ottawa Canada, July 28-31,

2011

VKI RP 2011-104

BABAJEE, J. & ARTS, T.: Investigation of the laminar separation-induced transition with the transition model on low-pressure turbine rotor blades at steady conditions
Proceedings of the ASME Turbo Expo 2012, Copenhagen, Denmark, June 11-15, 2012, Paper GT2012-68687

BABAJEE, J. & ARTS, T.: Investigation of the laminar separation-induced transition with the transition model on one very high-lift low-pressure turbine (t2) and one engine-like scale low-pressure turbine (tx) rotor blades at steady conditions and and freestream turbulence freestream turbulence
47th Applied Aerodynamics Symposium, Paris, France, 26-28 March 2012, FP27-2012-babajee
VKI RP 2012-19

COLETTI, F.; CRESCI, I.; ARTS, T. :Time-Resolved PIV Measurements of Turbulent Flow in Rotating Rib-Roughened Channel With Coriolis and Buoyancy Forces
Proceedings of ASME Turbo Expo 2012: Power for Land, Sea and Air, Copenhagen, Denmark, June 11-15, 2012, GT2012-69406
VKI RP 2012-41

JANSSENS, B.; RECKER, E.; LIMAM, K.; BOSSCHAERTS, W.; ARTS, T. : Etude expérimentale de la coagulation des particules dans une enceinte ventilée
13ème Congrès Francophone de Techniques Laser, CFTL 2012 , 18 – 21 Septembre 2012, Rouen, France
VKI RP 2012-48

ARTS, T.
Heat transfer and aerodynamics of internal cooling channels, both fixed and in rotation
ISUAAAT 13, The 13th International Symposium on Unsteady Aerodynamics, Aeroacoustics and Aeroelasticity of Turbomachines, September 11-14, 2012, Tokyo, Japan
VKI RP 2012-73

Technical Notes

VAN HOVE, W. & ARTS, T.: Comparison of several finite difference schemes for time marching methods as applied to one dimensional nozzle flow.
TN 132, June 1979.

ARTS, T. & VAN HOVE, W.: Cascade flow calculations using a finite volume method.
TN 146, October 1982.

ARTS, T.: Three dimensional rotational inviscid flow calculation in axial turbine blade rows.
TN 154, September 1985.

ARTS, T.; LAMBERT de ROUVROIT, M.; RUTHERFORD, A.W.: Aero-thermal investigation of a highly loaded transonic linear turbine guide vane cascade. A test case for inviscid and viscous flow computations.
TN 174, September 1990.

Reports

TAKAHASHI, T.; ARTS, T.; VERSTRAETE, T.: Assessment of CFD performance for film-cooled gas turbine blade - heat transfer prediction by RANS turbulence modeling
CRIEPI Report M10013
VKI RP 2011-36