Mac Gaunaa - DTU Orbit (17/02/2019)
Gaunaa, Mac
macg@dtu.dk
Department of Wind Energy - Senior Scientist
Aerodynamic design

Research outputs:

Advanced Wind Tunnel Boundary Simulation for Kevlar Wall Aeroacoustic Wind Tunnels
Devenport, W., Brown, K., Borgoltz, A., Paterson, E., Bak, C., Sørensen, N. N., Olsen, A. S., Gaunaa, M., Fischer, A. & Grinderslev, C. 2018
Research output: Research - peer-review › Paper – Annual report year: 2018

CFD simulations of a conceptual Rain Erosion Teste
Research output: Research › Report – Annual report year: 2018

Dynamic stall model modifications to improve the modeling of vertical axis wind turbines
Research output: Research › Report – Annual report year: 2018

Fast trailed and bound vorticity modeling of swept wind turbine blades
Research output: Research - peer-review › Conference article – Annual report year: 2018

Investigation of droplet path in a rain erosion tester
Gaunaa, M., Sørensen, N. N., Johansen, N. F-J., Olsen, A. S., Bak, C. & Andersen, R. B. 2018 In : Journal of Physics: Conference Series. 1037, 6, 10 p., 062030
Research output: Research - peer-review › Conference article – Annual report year: 2018

Wind tunnel tests of an airfoil with 18% relative thickness equipped with vortex generators
Research output: Research - peer-review › Conference article – Annual report year: 2018

The flow upstream of a row of aligned wind turbine rotors and its effect on power production
Research output: Research - peer-review › Journal article – Annual report year: 2016

Aerodynamic Optimization of Vertical Axis Wind Turbine with Trailing Edge Flap
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Cylindrical vortex wake model: skewed cylinder, application to yawed or tilted rotors
Research output: Research - peer-review › Journal article – Annual report year: 2015

Full scale wind turbine test of vortex generators mounted on the entire blade
Research output: Research - peer-review › Conference article – Annual report year: 2016
Impact of a wind turbine on turbulence: Un-freezing turbulence by means of a simple vortex particle approach
Research output: Research - peer-review › Journal article – Annual report year: 2016

Modelling of Vortex-Induced Loading on a Single-Blade Installation Setup
Research output: Research - peer-review › Conference article – Annual report year: 2016

Sizing and control of trailing edge flaps on a smart rotor for maximum power generation in low fatigue wind regimes:
Control of trailing edge flaps on a smart rotor for maximum power generation
Research output: Research - peer-review › Journal article – Annual report year: 2015

Toward an engineering model for the aerodynamic forces acting on wind turbine blades in quasisteady standstill and blade installation situations
Research output: Research - peer-review › Conference article – Annual report year: 2016

What is the critical height of leading edge roughness for aerodynamics?
Research output: Research - peer-review › Conference article – Annual report year: 2016

Analysis of wind turbine aerodynamics and aeroelasticity using vortex-based methods
Branlard, E. S. P. & Gaunaa, M. Apr 2015 DTU Wind Energy. 219 p. (DTU Wind Energy PhD; No. 0052(EN)).
Research output: Research › Ph.D. thesis – Annual report year: 2015

Aerodynamic response of an airfoil section undergoing pitch motion and trailing edge flap deflection: a comparison of simulation methods
Research output: Research - peer-review › Journal article – Annual report year: 2014

Aeroelastic large eddy simulations using vortex methods: unfrozen turbulent and sheared inflow
Research output: Research - peer-review › Conference article – Annual report year: 2015

Creating a benchmark of vertical axis wind turbines in dynamic stall for validating numerical models
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Cylindrical vortex wake model: right cylinder
Research output: Research - peer-review › Journal article – Annual report year: 2014

Empirical modeling of single-wake advection and expansion using full-scale pulsed lidar-based measurements
Research output: Research - peer-review › Journal article – Annual report year: 2014
Increase in the Annual Energy Production due to a Retrofit of Vortex Generators on Blades
Research output: Research › Sound/Visual production (digital) – Annual report year: 2016

Superposition of vortex cylinders for steady and unsteady simulation of rotors of finite tip-speed ratio
Research output: Research - peer-review › Journal article – Annual report year: 2015

Wind turbine blade vibration at standstill conditions — the effect of imposing lag on the aerodynamic response of an elastically mounted airfoil
Research output: Research - peer-review › Journal article – Annual report year: 2014

Analysis of aerelastic loads and their contributions to fatigue damage
Research output: Research - peer-review › Conference article – Annual report year: 2014

Development of new tip-loss corrections based on vortex theory and vortex methods
Research output: Research - peer-review › Conference article – Annual report year: 2014

First-order aerodynamic and aerelastic behavior of a single-blade installation setup
Research output: Research - peer-review › Conference article – Annual report year: 2014

Investigation of a new model accounting for rotors of finite tip-speed ratio in yaw or tilt
Research output: Research - peer-review › Conference article – Annual report year: 2014

Self-induced vibrations of a DU96-W-180 airfoil in stall
Research output: Research - peer-review › Journal article – Annual report year: 2013

Sizing and Control of Trailing Edge Flaps on a Smart Rotor for Maximum Power Generation in Low Fatigue Wind Regimes
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

The Effect of Mounting Vortex Generators on the DTU 10MW Reference Wind Turbine Blade
Research output: Research - peer-review › Conference article – Annual report year: 2014

Validation of vortex code viscous models using lidar wake measurements and CFD
Research output: Research - peer-review › Poster – Annual report year: 2014

Validation of vortex code viscous models using lidar wake measurements and CFD
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Vortex-induced vibrations of a DU96-W-180 airfoil at 90° angle of attack
Research output: Research - peer-review › Journal article – Annual report year: 2014
Developing the basis for the design of a 10 MW lightweight rotor
Research output: Research › Sound/Visual production (digital) – Annual report year: 2013

Indicial lift response function: an empirical relation for finite-thickness airfoils, and effects on aeroelastic simulations
Research output: Research - peer-review › Journal article – Annual report year: 2013

Rotor Performance Enhancement Using Slats on the Inner Part of a 10MW Rotor
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

The DTU 10-MW Reference Wind Turbine
Research output: Research › Sound/Visual production (digital) – Annual report year: 2013

Vortex methods to answer the need for improved understanding and modelling of tip-loss factors
Research output: Research - peer-review › Journal article – Annual report year: 2013

Analysis and modeling of unsteady aerodynamics with application to wind turbine blade vibration at standstill conditions
Research output: Research › Ph.D. thesis – Annual report year: 2012

An improved tip-loss correction based on vortex code results
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Application of engineering models to predict wake deflection due to a tilted wind turbine
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

ATEFlap Aerodynamic Model, a dynamic stall model including the effects of trailing edge flap deflection
Bergami, L. & Gaunaa, M. 2012 Roskilde: Danmarks Tekniske Universitet, Riso Nationalaboratoriet for Bæredygtig Energi . 52 p. (Denmark. Forskningscenter Risoe. Risoe-R; No. 1792(EN)).
Research output: Research › Report – Annual report year: 2012
Closed loop control of a flap exposed to harmonic aerodynamic actuation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Design and Wind Tunnel Testing of a Thick, Multi-Element High-Lift Airfoil
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Development of new tip-loss corrections based on vortex theory and vortex methods
Branlard, E. & Gaunaa, M. 2012 Proceedings of Torque 2012, the science of making torque from wind.
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Development of new tip-loss corrections based on vortex theory and vortex methods
Branlard, E. & Gaunaa, M. 2012 1 p.
Research output: Research › Poster – Annual report year: 2012

Light Rotor: The 10-MW reference wind turbine
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Modelling of unsteady airfoil aerodynamics for the prediction of blade standstill vibrations
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Modelling the influence of yaw using a simple vortex rotor model
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Modelling the influence of yaw using a simple vortex rotor model
Research output: Research - peer-review › Poster – Annual report year: 2012

Quantification of the Effects of Using Slats on the Inner Part of a 10MW Rotor
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Quantification of the Effects of Using Slats on the Inner Part of a 10MW Rotor
Research output: Research - peer-review › Poster – Annual report year: 2012

Simulations of a rotor with active deformable trailing edge flaps in half-wake inflow: Comparison of EllipSys 3D with HAWC2
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012
A computational efficient algorithm for the aerodynamic response of non-straight blades
Research output: Research › Article in proceedings – Annual report year: 2011

A computationally efficient method for determining the aerodynamic performance of kites for wind energy applications
Research output: Research › Article in proceedings – Annual report year: 2011

Comparison of wind tunnel results for two active aerodynamic load control devices
Research output: Research › Article in proceedings – Annual report year: 2011

Design and test of a thick, flatback, high-lift multi-element airfoil
Research output: Research › Conference abstract in proceedings – Annual report year: 2011

Design og optimering af vingetipper for vindmøller: Slutrapport
Research output: Research › Report – Annual report year: 2011

Hvordan kan vindmøller nedbringe en færges luftmodstand?
Gaunaa, M. 2011
Research output: Communication › Net publication - Internet publication – Annual report year: 2011

Indicial Response Function for Finite-Thickness Airfoils, A Semi-Empirical Approach
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Status of airfoil design and plans for wind tunnel tests of new thick airfoils
Research output: Research › Conference abstract in proceedings – Annual report year: 2011

A Comparison of Two Devices for Distributed Active Load Control of Wind Turbine Blades
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Actuator disc simulations of influence of wind shear and ground proximity on power production of wind turbines
Research output: Research › Article in proceedings – Annual report year: 2010

Actuator Disc Simulations of Influence of Wind Shear on Power Production of Wind Turbines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010
A near wake model for deformable trailing edge flaps implemented the in multi body aero-servo-elastic code HAWC2
Andersen, P. B., Aagaard Madsen, H. & Gaunaa, M. 2010 EWEC 2010 Proceedings online. European Wind Energy Association (EWEA)
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

DAN-AERO MW: Comparisons of airfoil characteristics for two airfoils tested in three different wind tunnels
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

DAN-AERO MW: Detailed aerodynamic measurements on a full scale MW wind turbine
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Deformable trailing edge flaps for modern megawatt wind turbine controllers using strain gauge sensors
Research output: Research - peer-review › Journal article – Annual report year: 2010

Stability investigation of an airfoil section with active flap control
Research output: Research - peer-review › Journal article – Annual report year: 2010

The DAN-AERO MW experiments
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

The DAN-AERO MW Experiments: Final report
Research output: Research - Report – Annual report year: 2010

Thick Multiple Element Airfoils for use on the Inner Part of Wind Turbine Rotors
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Unsteady two-dimensional potential-flow model for thin variable geometry airfoils
Research output: Research - peer-review › Journal article – Annual report year: 2010

Wind Tunnel Test of a Closed Loop Controller for an Airfoil with Trailing Edge Flaps
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Wind tunnel test on airfoil Riso-B1-18 with an Active Trailing Edge Flap
Research output: Research - peer-review › Journal article – Annual report year: 2010

Wind turbine blade vibration at standstill conditions - the effect of imposing lag on the response of an elastically mounted airfoil
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Wind turbine blade vibration at standstill conditions – the effect of imposing time lag onto aerodynamic response
Skrzypinski, W. R. & Gaunaa, M. 2010
Research output: Research › Poster – Annual report year: 2010

A dynamic stall model for airfoils with deformable trailing edges
Andersen, P. B., Gaunaa, M., Bak, C. & Hansen, M. H. Nov 2009 In : Wind Energy. 12, 8, p. 734-751
Research output: Research - peer-review › Journal article – Annual report year: 2009

Aeroservoelastic stability of an airfoil section equipped with trailing edge flap
Research output: Research › Conference abstract in proceedings – Annual report year: 2009

Design and test of a controllable rubber trailing edge flap
Research output: Research › Conference abstract in proceedings – Annual report year: 2009

Design of a wind turbine rotor for maximum aerodynamic efficiency
Research output: Research - peer-review › Journal article – Annual report year: 2009

Load reduction using pressure difference on airfoil for control of trailing edge flaps
Gaunaa, M. & Andersen, P. B. 2009 EWEC 2009 Proceedings online. EWEC
Research output: Research › Article in proceedings – Annual report year: 2009

Stability limits for a full wind turbine equipped with trailing edge systems
Research output: Research › Article in proceedings – Annual report year: 2009

Theory and design of flow driven vehicles using rotors for energy conversion
Research output: Research › Article in proceedings – Annual report year: 2009

Thick Airfoils and High Lift
Research output: Research › Book chapter – Annual report year: 2009

Can CP be increased by the use of winglets? - or - A theoretical and numerical investigation of the maximum aerodynamic efficiency of wind turbine rotors with winglets
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Design and verification of airfoils resistant to surface contamination and turbulence intensity
Research output: Research › Article in proceedings – Annual report year: 2008
Implementing a dynamic stall model for airfoils with deformable trailing edges
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Increased Aerodynamic Efficiency on Wind Turbine Rotors using Winglets
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Integrating deformable trailing edge geometry in modern Mega-Watt wind turbine controllers
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Investigation of stability issues for an adaptive trailing edge system
Research output: Research › Article in proceedings – Annual report year: 2008

Investigation of Stability Issues for an Adaptive Trailing Edge System
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Latest results and future activities at Risø DTU within trailing edge flaps
Research output: Research › Sound/Visual production (digital) – Annual report year: 2008

Load alleviation on wind turbine blades using variable airfoil geometry
Buhl, T., Gaunaa, M., Andersen, P. B. & Bak, D. C. 2008
Research output: Research › Sound/Visual production (digital) – Annual report year: 2008

Verification of airfoil design with focus on transition
Research output: Research › Book chapter – Annual report year: 2008

Vinger med flapper: Hvor tæt er vi på at kunne efterligne fuglens vinger?
Research output: Research › Conference abstract for conference – Annual report year: 2008

3D Navier-Stokes simulations of a rotor designed for maximum aerodynamic efficiency
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

A dynamic stall model for airfoils with deformable trailing edges
Andersen, P. B., Gaunaa, M., Bak, D. C. & Hansen, M. H. 2007 In : Journal of Physics Conference Series. 75, 10 p., 012028
Research output: Research - peer-review › Journal article – Annual report year: 2007

Can winglets increase Cp? ...and if so, how much
Determination of the maximum aerodynamic efficiency of wind turbine rotors with winglets
Research output: Research - peer-review › Conference article – Annual report year: 2007

Estimation of possible increase in Cp by use of Winglets
Research output: Research - Book chapter – Annual report year: 2007

Kan en vinddrevet bil køre i modvind?
Gaunaa, M. 2007
Research output: Research › Paper – Annual report year: 2007

Load alleviation on wind turbine blades using variable airfoil geometry
Buhl, T., Bak, D. C., Gaunaa, M. & Andersen, P. B. 2007
Research output: Research › Conference abstract for conference – Annual report year: 2007

Load alleviation on wind turbine blades using variable airfoil geometry. Adapwing 1 and 2
Gaunaa, M., Andersen, P. B., Bak, D. C. & Buhl, T. 2007
Research output: Research › Conference abstract for conference – Annual report year: 2007

Load alleviation through adaptive trailing edge control surfaces: ADAPWING overview
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Vindtunnelforsøg med højfrekvente trykmålinger
Research output: Research › Paper – Annual report year: 2007

Wind tunnel test of the Risø-B1-18 airfoil with piezo ceramic actuators to vary the shape
Research output: Research › Paper – Annual report year: 2007

Wind tunnel test on wind turbine airfoil with adaptive trailing edge geometry
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Wind turbine airfoil design considering aerodynamic and structural characteristics in 3D blade design
Bak, D. C., Andersen, P. B. & Gaunaa, M. 2007
Research output: Research › Paper – Annual report year: 2007

Investigation of the effect of deformable trailing edge geometry control systems on flutter velocity (paper and poster)
Gaunaa, M. 2006 Proceedings (online). Brussels: European Wind Energy Association (EWEA)
Research output: Research › Article in proceedings – Annual report year: 2006

Load alleviation on wind turbine blades using variable airfoil geometry
Andersen, P. B., Gaunaa, M., Bak, C. & Buhl, T. 2006 Proceedings (online). Brussels: European Wind Energy Association (EWEA)
Research output: Research › Article in proceedings – Annual report year: 2006
Load alleviation on wind turbine blades using variable airfoil geometry
Bak, C., Buhl, T., Gaunaa, M. & Andersen, P. B. 2006
Research output: Research › Conference abstract for conference – Annual report year: 2006

Load alleviation on wind turbine blades using variable airfoil geometry
Andersen, P. B., Gaunaa, M., Bak, C. & Buhl, T. 2006
Research output: Research › Conference abstract for conference – Annual report year: 2006

New airfoil family considering structural stiffness and compatibility
Research output: Research - peer-review › Book chapter – Annual report year: 2006

Performance of the Risø-B1 airfoil family for wind turbines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2006

Unsteady 2D potential-flow forces on a thin variable geometry airfoil undergoing arbitrary motion
Gaunaa, M. 2006 53 p. (Denmark. Forskningscenter Risoe. Risoe-R; No. 1478(EN)).
Research output: Research - peer-review › Report – Annual report year: 2006

Load reduction potential using airfoils with variable trailing edge geometry
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Load reduction potential using airfoils with variable trailing edge geometry
Buhl, T., Gaunaa, M. & Bak, C. 2005 presented at the 42. AIAA aerospace sciences meeting and exhibit.
Research output: Research › Conference abstract in proceedings – Annual report year: 2005

Measurements on the Thunder TH-6R actuator
Buhl, T., Gaunaa, M., Bak, C., Hansen, P. & Clemmensen, K. 2005 22 p. (Denmark. Forskningscenter Risoe. Risoe-R; No. 1537(EN)).
Research output: Research › Report – Annual report year: 2005

Modellering af pitchmoment på fleksible vinger med stor udbøjning
Research output: Research › Book chapter – Annual report year: 2005

Performance of the Risø-B1 airfoil family for wind turbines (poster)
Research output: Research › Conference abstract in proceedings – Annual report year: 2005

Potential load reduction using airfoils with variable trailing edge geometry
Research output: Research - peer-review › Journal article – Annual report year: 2005

Udvikling af model for 3D induktions- og stallmodellering
Research output: Research - peer-review › Book chapter – Annual report year: 2005
Design and verification of the Risø-B1 airfoil family for wind turbines
Research output: Research - peer-review › Journal article – Annual report year: 2004

A Beddoes-Leishman type dynamic stall model in state-space and indicial formulations
Research output: Research › Report – Annual report year: 2004

Design and verification of the Risø-B1 airfoil family for wind turbines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2004

Design and verification of the Risø-P airfoil family for wind turbines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2004

Open-jet wind tunnel validation and measurements on a NACA 0012 airfoil
Research output: Research › Report – Annual report year: 2004

Open-jet wind tunnel validation using a NACA 0012 airfoil
Research output: Research - peer-review › Article in proceedings – Annual report year: 2004

Stilstandslaster
Research output: Research › Book chapter – Annual report year: 2004

Unsteady aerodynamic in 2D and 3D using indicial function concepts
Gaunaa, M. 2004
Research output: Research › Conference abstract for conference – Annual report year: 2004

Wind tunnel tests of Risø-P-15 and Risø-P-21
Bak, C., Gaunaa, M., Fuglsang, P. & Antoniou, I. 2004 69 p. (Denmark. Forskningscenter Risoe. Risoe-R; No. 1461(EN)).
Research output: Research › Report – Annual report year: 2004

Aeroelastic simulation of a wind turbine airfoil by coupling CFD and a beam element model
Research output: Research › Conference abstract in proceedings – Annual report year: 2003

Computation of modal aerodynamic damping using CFD
Research output: Research › Article in proceedings – Annual report year: 2003

Experimental Investigation of Unsteady Aerodynamic Forces on Airfoil in Harmonic Translatory Motion
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003
Unsteady aerodynamic forces on a NACA 0015 airfoil
Gaunaa, M. 2003
Research output: Research › Conference abstract for conference – Annual report year: 2003

Viscous and aeroelastic effects on wind turbine blades. The VISCEL project. Part 1: 3D Navier-Stokes rotor simulations
Research output: Research - peer-review › Journal article – Annual report year: 2003

Viscous and aeroelastic effects on wind turbine blades. The VISCEL project. Part 2: Aeroelastic stability investigations
Research output: Research - peer-review › Journal article – Annual report year: 2003

Wind tunnel measurements on two Risø-B1 airfoils
Research output: Research › Article in proceedings – Annual report year: 2003

Wind tunnel tests of Risø-B1-18 and Risø-B1-24
Fuglsang, P., Bak, C., Gaunaa, M. & Antoniou, I. 2003 82 p. (Denmark. Forskningscenter Risoe. Risoe-R; No. 1375(EN)).
Research output: Research › Report – Annual report year: 2003

Unsteady Aerodynamic Forces on NACA 0015 Airfoil in Harmonic Translatory Motion
Gaunaa, M., Sørensen, J. N. & Larsen, P. S. Dec 2002 (MEK-FM-PHD; No. 2002-02).
Research output: Research › Ph.D. thesis – Annual report year: 2002

Computation of aerodynamic damping for wind turbine applications
Research output: Research › Article in proceedings – Annual report year: 2002

Experimental Investigation of Airfoil Subjected to Harmonic Translatory Motions
Research output: Research - peer-review › Article in proceedings – Annual report year: 2002

Vindenergi og vindmøller
Gaunaa, M. 2002
Research output: Research › Conference abstract for conference – Annual report year: 2002
Experimental investigation of airfoil subject to harmonic edge-and spanwise movement  
Research output: Research - peer-review › Article in proceedings – Annual report year: 2001

Aeroelastic Analysis of Airfoil Section  
Research output: Research - peer-review › Article in proceedings – Annual report year: 1999

Projects:

**Development of the next-generation engineering aerodynamic models for wind turbine rotors**  
Li, A., Gaunaa, M., Aagaard Madsen, H. & Pirrung, G.  
01/01/2019 → 31/12/2021  
Project: PhD

**Aeroelastisk analyse af vindmøllerotor**  
01/08/1998 → 05/12/2002  
Project: PhD

**Unsteady Flow Modeling and Experimental Verification of Active Flow Control Concepts for Wind Turbine Blades**  
Bæk, P., Gaunaa, M., Korsgaard, J., Hansen, M. O. L., Bottasso, C. L. & van Kuik, G. ErhvervsPhD-ordningen VTU  
01/12/2008 → 02/05/2012  
Project: PhD

**Simulation of Moving Trailing Edge Flaps on a Wind Turbine Blade using Navier-Stokes based Immersed Boundary Method**  
Behrens, T., Shen, W. Z., Sørensen, J. N., Sørensen, N. N., Wedel-Heinen, J. J., Gaunaa, M., Bijl, H. & Davidson, L. Ansat eksternt  
15/07/2008 → 21/12/2011  
Project: PhD

**Wind Turbine Aerodynamics and Aeroelasticity using Vortex Based Methods**  
Branlard, E. S. P., Gaunaa, M., Sørensen, J. N., Hjort, S. & van Kuik, G. A. Eksternt finansieret virksomhed  
01/04/2012 → 22/06/2015  
Project: PhD

**Analysis and modeling of unsteady aerodynamics with application to wind turbine blade vibration at standstill conditions**  
Skrzypinski, W. R., Gaunaa, M., Bak, C., Bertagnolio, F., Mikkelsen, R. F., Riziotis, V. A. & Wedel-Heinen, J. J. Institut, samfinansiering  
15/12/2008 → 23/05/2012  
Project: PhD

**Wind Turbine with Trailing Edge Flaps for Load Alleviation**  
Andersen, P. B., Poulsen, N. K., Bak, C., Buhl, T., Gaunaa, M., Knudsen, T., Wedel-Heinen, J. J. & van Kuik, G. Risø (Løn)  
01/10/2006 → 30/06/2010  
Project: PhD

**Adaptive Trailing Edge Flap, control for enhanced load alleviation**  
Bergami, L., Gaunaa, M., Buhl, T., Poulsen, N. K., Mikkelsen, R. F., Schepers, G. & Bossanyi, E. A.
Institut, samfinansiering
01/01/2010 → 27/08/2013
Project: PhD

Optimization of Rotors - using Advanced Aerodynamic and Aeroelastic Models and Numerical Optimization
Døssing, M., Bak, C., Gaunaa, M., Aagaard Madsen , H., Hansen, M. O. L., Riziotis, V. A. & Wedel-Heinen, J. J.
Institut stipendie (DTU) Samf.
01/02/2008 → 01/06/2011
Project: PhD

44525-4610: National Wind Tunnel
Bak, C., Fischer, A., Gaunaa, M., Mikkelsen, R. F., Mann, J. & Barlas, A.
15/08/2012 → 31/12/2016
Project: Research

43176-4610: Power Pack
Bak, C., Gaunaa, M., Skrzypinski, W. R., Zahle, F. & Sørensen, N. N.
01/01/2013 → 31/12/2015
Project: Research

43195: Blade Dragon 2.0
Gaunaa, M., Bergami, L., Hansen, A. M., Zahle, F., Hansen, A. D. & Barlas, A.
01/07/2013 → 30/06/2016
Project: Research

43028 4610: Light Rotor
Bak, C., Zahle, F., Kim, T., Yde, A., Sørensen, N. N., Gaunaa, M. & Skrzypinski, W. R.
01/10/2010 → 31/05/2014
Project: Research

Tree-code algorithm for large scale vortex method simulation
Branlard, E. S. P., Gaunaa, M. & Mercier, P.
01/04/2014 → 01/10/2014
Project: Research

VCH: Virtual Campus Hub
Badger, M., Karagali, I., Larsen, S. E., Bingöl, F., Badger, J., Nielsen, M., Peña, A., Gryning, S., Berg, J., Bergami, L.,
Cronin, T., Hansen, B. O., Jowitt, W. R., Ejsing Jørgensen, H., Kelly, M. C., Mortensen, N. G., Lundtang Petersen, E.,
Rathmann, O. S., Verelst, D. R., Nielsen, R. A., Prag, S. W., Stenbæk, L., Gaunaa, M. & Andersen, P. B.
01/10/2011 → 30/09/2013
Project: Research

PowerPack: Standardiserede Power Packs til forbedret aerodynamik i vindmøller - PowerPack
Bak, C., Gaunaa, M. & Zahle, F.
01/01/2013 → 31/12/2015
Project: Research

Light Rotor: Light Rotor
Bak, C., Zahle, F., Kim, T., Gaunaa, M., Sørensen, N. N., Hansen, M. H., Bitsche, R. & Blasques, J. P. A. A.
01/10/2010 → 30/09/2013
Project: Research

Aeroelastic analysis of wind turbine rotor
Gaunaa, M.
01/08/1998 → 31/07/2001
Project: Research
Activities:

**Kuren mod klimaproblemet - Et bud på løsningen fra et teknisk-videnskabeligt vindenergi-synspunkt**
Gaunaa, M. (Guest lecturer)
29 Nov 2017
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

**The Poul la Cour Tunnel: A new aerodynamic and aeroacoustic wind tunnel dedicated to wind energy**
Bak, C. (Other), Fischer, A. (Other), Mikkelsen, R. F. (Other), Olsen, A. S. (Other), Gaunaa, M. (Other), Fernandez Grande, E. (Other), Skrzypinski, W. R. (Other)
28 Nov 2017 → 30 Nov 2017
Activity: Talks and presentations › Conference presentations

**An Engineering 2D Vortex-based Model for VAWT Aerodynamics**
Gaunaa, M. (Guest lecturer)
28 Jun 2017
Activity: Talks and presentations › Conference presentations

**Improved Roughness Model for 2D Viscous-Inviscid Panel Methods**
Olsen, A. S. (Speaker), Ramos Garcia, N. (Other), Christian Bak (Other), Gaunaa, M. (Other)
28 Jun 2017
Activity: Talks and presentations › Conference presentations

**Test possibilities in the Poul la Cour Tunnel**
Bak, C. (Speaker), Fischer, A. (Other), Mikkelsen, R. F. (Other), Olsen, A. S. (Other), Gaunaa, M. (Other), Skrzypinski, W. R. (Other), Fernandez Grande, E. (Other)
26 Jun 2017
Activity: Talks and presentations › Conference presentations

**Investigation of the flow in a rain erosion tester**
Bak, C. (Speaker), Sørensen, N. N. (Other), Olsen, A. S. (Other), Bech, J. I. (Other), Gaunaa, M. (Other), Kusano, Y. (Other)
27 Feb 2017
Activity: Talks and presentations › Conference presentations

Press clippings:

**Hvordan kan vindmøller nedbringe en færges luftmodstand?**
Mac Gaunaa
27/08/2011
1 media contribution
Press/Media: Press / Media

**Hvorfor drejer vingene samme vej på alle vindmøller, og hvorfor ligger vindmøller altid på en række?**
Mac Gaunaa
20/12/2010
1 media contribution
Press/Media: Press / Media

**Hvorfor har vindmøller tre vinger?**
Mac Gaunaa
13/12/2010
1 media contribution
Press/Media: Press / Media
Kan vindmøller ændre Jordens rotation?
Mac Gaunaa
18/08/2010
1 media contribution
Press/Media: Press / Media

Modvindsbil
Mac Gaunaa
06/01/2009
1 media contribution
Press/Media: Press / Media