

Second International Conference in Numerical and Experimental Aerodynamics of Road Vehicles and Trains (AEROVEHICLES 2)

21-23 June 2016, Göteborg, Sweden

Preliminary Program

Tuesday 21 June

08:30-08:50 Welcome coffe/tea and registration

08:50-09:00 Conference opening

09:00-09:40 Invited talk: Branislav Basara

The maturity of CFD for vehicle aerodynamics

09:40-10:40 Plenary session: Road vehicle aerodynamics and flow control

S. Edwige , Y. Eulalie, P. Gilotte, I. Mortazavi & C. N. Nayeri

LES computations around a 47 Ahmed body: Flow description and flow control solutions for drag reductions

G. Bonnavion, O. Cadot, A. Evrard, V. Herbert, S. Parpais, R. Vigneron & J. Delery

On multistabilities of real cars' wake

R. Futrsynski & G. Efraimsson

Numerical modeling of plasma-actuators for control of separated flows

10:40-11:00 Coffe/tea brake

11:00-13:00 Plenary session: Road vehicle aerodynamics and flow control

C-H Bruneau, K. Khadra & I. Mortazavi

Effects of the distance on the ground vehicle platooning

G. Minelli, E. A. Hartono, S. Krajnovic, V. Chernoray, B. Basara & L.Hjelm

Experimental and numerical investigation of active flow control on a generic truck cabine

A.Evrard, O. Cadot, L. Pastor, F. Lusseyran L. Mathekin, D. Sipp & H. Abou-Kandil

Active control of the reflectional symmetry breaking modes on a square-back Ahmed body

E. Guilmineau, G. B. Deng, P. Queutey & M. Visonneau

Comparison of RANS and hybrid RANS-LES turbulence models for flow simulation around the Ahmed body

L. Dalla Longa & A. S. Morgans

Simulation and Active Feedback Control of the flow around Square-Back Bluff Bodies

R. D. Brackston, J. M. Garcia de la Cruz, A. Wynn, R. Rigas and J. F. Morrison
Drag reduction of the Flat-Backed Ahmed Body by Active Supression of Wake Asymmetry

13:00-14:20 **Lunch**

14:20-16:00 **Plenary session: Road vehicle aerodynamics**

M. Metka, J. Gregory & J. McKillen
Investigation of Fluidic Oscillator Flow Control for Ground Vehicles

Jean-Eloi Lombard, H. Xu, D. Moxey & S. Sherwin
Unsteady rotating wheel wake

G. Rossitto, C. Sicot, V. Ferrand, J. Boree & F. Harambat
Drag and crosswind sensitivity of rounded fastback vehicle

L. Salati, P. Schito, D. Rocchi & F. Cheli
Lateral wind effect on heavy truck approaching a bridge tower

J. M Garcia de la Cruz, R. D. Brackton & J. F. Morrison
Passive Control of Base Pressure of an Ahmed Blunt Body Using a Perimetric Breather

16:00-16:20 **Coffe/tea break**

16:20-18:00 **Plenary Session: Aerodynamics of trains and road vehicles**

J. R. Bell, D. Burton, M.C. Thompson, A. Herbst and J. Sheridan
The effect of tail roof-angle of the unsteady wake structure and slipstream of high-speed trains

C. Baker, A. Quinn, H. Hemida, M. Gallagher, J. Morden & D. Soper
The measurement of train aerodynamics parameters in operational conditions-trackside measurements

D. Barros, A. Spohn, J. Östh, J. Boree, B. R. Noack & S. Krajnovic
Asymmetries and wake equilibrium pas a square-back Ahmed model: simulation and experiments

A.Seifert
How can the energy consumption of AFC systems be reduced?

O. Evstafyeva & A. S. Morgans
Feedback Control of Square-Back Ahmed Body Flow for Form-Drag Reduction

19:00-20:30 **Welcome reception hosted by the City of Gothenburg**

Wednesday 22 June

09:00-09:40 **Invited talk: Haecheon Choi**

Flow over an Ahmed body and its controls

09:40-11:00 **Plenary session: Flow control and aerodynamics**

D. Barros, J. Boree, B. R. Noack & A. Spohn

Drag control of blunt vehicles using fluidic actuation

F. Delassaux, V. Herbert, S. Krajnovic, I. Mortazavi & C. Ribes

Comparison of the flow around rounded and sharp edges Ahmed bodies using hybrid turbulence simulations

E. Varon, Y. Eulalie, S. Edwige, P. Gilotte & J-L. Aider

Closed-loop control of a bi-stable wake using, real-time PIV

P. Joseph, F. Stella, S. Loyer, N. Mazallier & A. Kourta

Flow separation control on a 2D backward facing ramp using synthetic jets

11:00-11:20 **Coffee/tea break**

11:20-12:40 **Plenary session: Aerodynamics of commercial and passenger vehicles**

R. Li, B. R. Noack, L. Cordier, T. Duriez, J. Boree & F. Harambat

Closed-loop aerodynamic drag reduction of a car using linear genetic programming

J. A. Vernet, R. Örlu, P. H. Alfredsson & P. Elofsson

Plasma streamwise vortex generators for flow separation control

K. H. Lo & K. Kontis

Flow control over a tractor-trailer using vortex generator

M. Kim, S. Lee, D. You, B. G. Hwang, E. J. Lee, J. J. Kim & S. J. Lee

Reduction of aerodynamic drag over a heavy vehicle using side skirts

M. Benincasa & G. P. Romano

Interaction among horizontal and vertical deflectors on a squareback car model

12:40-14:00 **Lunch**

14:00-15:20 **Plenary session: Flow control, Soiling and CFD**

J. Lee, H. Lee, Y. Jeong and J. Cho

A Study on the Flow Characteristics of Heavy Vehicle using Active Flow Control

G. Fotiadis, V. Skaperdas, A. Iordanidis

The influence of mesh characteristics on openfoam simulations of the Drivaer model

M. Szmigielski, T. Castelain, M. Michard, D. Chacaton & D. Juve

Impact of the underside velocity on the drag reduction of a trailer model using a passive control system

A. Kabanovs, G. Hodgson, A. Garmory, M. Passmore & A. Gaylard

Experimental and computational study of vehicle soiling on a generic SUV

15:20-15:40 Coffee/tea break

15:40-17:20 Plenary Session: Generic vehicles, Trains and Commercial vehicles

S. Pellerin, B. Podvin & L. Pastur

Numerical study of the RSB wakes of an Ahmed body

M. Chavez, D. M. Holman, R. Brionnaud & Z. Abiza

Unsteady and dynamic vehicle simulations using a lattice-Boltzmann method

V. Engel, S. Deng & P. Deeg

CFD simulation of the flow field near a regional train

S. Wang, J. R. Bell, D. Burton, A. Herbst, J. Sheridan & M. Thompson

The accuracy of different turbulence models (URANS, SAS and DES) for high-speed train slipstream

J. Cho & K. Yee

Aerodynamic effect with various configuration of drag reduction devices applied to DrivAer model

18:30-23:00 Conference dinner

Thursday 23 June

09:00-09:40 Invited talk: Vincent Herbert

Numerical and experimental investigations on flow control in vehicles aerodynamics

09:40-11:00 Plenary Session: Train aerodynamics

C. Somaschini, T. Argentini, D. Rocchi, P. Schito & G. Tomasini

Full-scale experimental study on the new Italian high-speed train aerodynamics: on board and trackside measurements

D. Rocchi, G. Tomasini, C. Somashini & S. Giappino
Underbody blockage effect on the aerodynamic coefficients of train vehicles

D. Soper, C. Baker & A. Jackson
A novel approach to measure aerodynamic flow beneath a train

J. Tschepe, C. N. Nayeri & C. O. Paschereit
Moving Model Drag Measurements of Rail Vehicles in Water Tanks

11:00-11:20 Coffee/tea break

11:20-12:20 Plenary session: Train aerodynamics, flow control and optimization

L. Tegehall, J. Östh, R. Gothäll, K-J. Loorentz & F. Ja
reman
Numerical simulations of micro-pressure waves generated by trains entering tunnels

F. Malmir & A. Khalkhali
Aerodynamic shape optimization of road vehicle using NSGA-II algorithm

A. Quinn, C. Baker H. Hemida, M. Gallagher, J. Morden & D. Soper
The measurement of train aerodynamics parameters in operational conditions-on-vehicle measurements

12:20-13:40 Lunch

13:40-14:40 Plenary session: External aerodynamics and cooling

D. Heine, G. Lauenroth & Klaus Ehrenfried
Optimisation of a long, vented tunnel hood based on Particle Image Velocimetry

P. Ekman, R. Gårdhagen, T. Virdhung M. Karlsson
Aerodynamics of an Empty Timber Truck- a Numerical and Experimental Investigation

S. Lange, J. Haff, S. Loose, C. Wagner, T. Barth, U. Görn, W. Maister, A. Wittmaier & L. G.
Garduno
Study of Cooling Airflow: Comparison of PIV and CFD Results

14:40-14:50 Closing of the conference