



5th International conference on  
**Driver Distraction  
and Inattention**

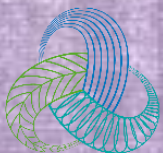
March 20-22 2017 | Paris, France

**FINAL PROGRAMME**



The DDI2017 conference will take place at IFSTTAR in Paris, France  
Venue: IFSTTAR, 14-20 Boulevard Newton, Cité Descartes, Champs-sur-Marne, France  
Web: [www.ifsttar.fr](http://www.ifsttar.fr); <https://ddi2017.sciencesconf.org>

Co-organisers:



**IFSTTAR**

**SAFER**  
VEHICLE AND TRAFFIC SAFETY CENTRE AT CHALMERS

**arob**  
GROUP

## About DDI2017



The 5th International Conference on Driver Distraction and Inattention (DDI2017). DDI2017 holds in Paris, France, on March 20-22, 2017, and follows the four highly successful DDI Conferences held previously in Gothenburg, Sweden (2009, 2011, 2013), and Sydney, Australia (2015).

The International Conference on Driver Distraction and Inattention aims to bring participants up-to-date on recent developments and trends in the field of inattention and distraction in driving, and to bring

together researchers and practitioners. Participants are invited to present and discuss current work covering basic and applied research, mitigation challenges, the latest policy developments, and priorities for research and countermeasures development.

DDI2017 conference thematics include theory, measurement, effects, crash risks, and prevention/mitigation related to driver distraction and inattention. Presentations take into account new forms of mobility (e.g. automated driving.), other road user groups (e.g. motorcyclists, bicyclists, pedestrians), new modes of HMI interaction (e.g. voice recognition, head up display, gesturing), new sources of distraction from outside the vehicle (e.g. digital advertising, LEDS signs).

DDI2017 is co-organised by IFSTTAR (French Institute of Science and Technology for Transport, Development and Networks), SAFER (Vehicle and Traffic Safety Center at Chalmers, Sweden), and the ARRB Group (the Australian Road Research Board).

# DDI2017 at a glance

	Monday 20th March 2017	Tuesday 21st March 2017	Wednesday 22nd March		
8.00 am			Registration - coffee		
8.30 am		Registration - coffee	Keynote 3: Michael Regan		
9.00 am		Keynote 1: Kalina Christoff			
9.30 am			Session 7A	Session 7B	
10.00 am		Session 3A	Session 3B	Coffee break	
10.30 am		Coffee break			
11.00 am			Session 4A	Session 4B	Session 8A
11.30 am					
12.00 pm					
12.30 pm		Registration - coffee	Lunch	Lunch	
1.00 pm					
1.30 pm	Opening session	Keynote 2: René Amalberti	Session 9A	Session 9B	
2.00 pm	Session 1A		Session 1B		
2.30 pm		Session 5A	Session 5B	Stephanie Binder memorial lecture	
3.00 pm	Coffee break				
3.30 pm	Session 2A	Session 2B	Coffee break		
4.00 pm			Special symposium		
4.30 pm	Special presentation	Session 6A - Special session	Closing session		
5.00 pm					
7.45 pm	3-hour evening dinner cruise on the river Seine				

1A	Naturalistic studies	1B	Driver monitoring
2A	Models of distraction and inattention	2B	Driver characteristics
3A	Distraction and automated driving	3B	Driver distraction
4A	Phone distraction	4B	Driver distraction
5A	Human machine interaction	5B	Vulnerable road users
6A	Special session		
7A	Driver characteristics	7B	Counter-measures
8A	Driver monitoring		
9A	Driver distraction	9B	Human machine interaction

# Day 1: Monday 20th March 2017

12.30 pm Registration - Coffee

1.30 pm Opening session

2.00 pm Parallel sessions

## 1A - Naturalistic studies

Chairwoman: H el ene TATTEGRAIN

### Naturalistic driving study on the usage of smart phone applications while driving

M akel a Jakke (1) (2), Kujala Tuomo (1)

1 - University of Jyv askyl a (Finland), 2 - ArcDia Ltd (Finland)

### How many times do young drivers actually touch their smartphone screens while driving?

Albert Gila (1) (2), Lotan Tsippy (2)(3)

1 - Holon Institute of Technology (Israel), 2 - The Ran Naor Research Institute (Israel), 3 - Or Yarok Association for safer driving (Israel)

### A data driven method to extract visual time-sharing sequences from naturalistic driving data

Ahlstrom Christer (1), Kircher Katja (1) (2)

1 - The Swedish National Road and Transport Research Institute (Sweden), 2 - Link oping University, Department of Behavioural Sciences and Learning (Sweden)

## 1B - Driver monitoring

Chairwoman: Catherine GABAUDE

### Analysis of a driver model sensitivity to various types of distraction

Mars Franck (1), Ameyoe Ablamvi (2) (1), Chevrel Philippe (1), Le Carpentier Eric (1), Illy Herv e (2)

1 - Institut de Recherche en Communications et en Cybern etique de Nantes (France), 2 - RENAULT SAS (France)

### Measuring driver fatigue based on eyelid opening level

Metz Barbara (1), Hargutt Volker (1), Landau Andreas (1), Neukum Alexandra (1)

1 - WIVW GmbH (Germany)

### Preventing driving accidents via detection of driver-induced steering oscillations

Sharma Dipak G. (1), Tanev Ivan (1), Shimohara Katsunori (1)

1 - Doshisha University (Japan)

3.00 pm Coffee break

3.30 pm Parallel sessions

## 2A - Models of distraction and inattention

Chairman: Josef KREMS

### Minimum required attention

Kircher Katja (1) (2), Ahlstrom Christer (1)

1 - The Swedish National Road and Transport Research Institute (Sweden), 2 - Link oping University, Department of Behavioural Sciences and Learning (Sweden)

### Modelling the effect of cognitive load on driver reactions to a braking lead vehicle: A computational account of the cognitive control hypothesis

Engstrom Johan (1), Markkula Gustav (2), Merat Natasha (2)

1 - Virginia Tech Transportation Institute (United States), 2 - Institute for Transport Studies, University of Leeds (United Kingdom)

### **Dynamic anticipation of driving scenarios**

Mühl Kristin (1), Baumann Martin (1)

1 - Ulm University (Germany)

## **2B - Driver characteristics**

Chairwoman: Tsippy LOTAN

### **Analysing the inability to focus on the driving task in young males, inexperienced and offender drivers**

Castro Candida (1), Gugliotta Andres (1), Jose Luis Padilla (1)

1 - University of Granada (Spain)

### **Driver distraction is an under-reported cause of road accidents: an examination of discrepancy between police officers' views and road accident reports**

Regev Shirley (1), Rolison Jonathan J (1), Feeney Aidan (2), Moutari Salissou (3)

1 - Department of Psychology, University of Essex (United Kingdom), 2 - Department of Psychology, Queen's University Belfast, (United Kingdom), 3 - Department of Mathematics and Physics, Queen's University Belfast, (United Kingdom)

**4.30 pm**

## **Special presentation**

### **Participatory research with children: a pilot workshop on distraction in mobility**

Rizzi Véronique (1), Excoffon-Gagnoud Marie (2)

1 - Imagineo (France), 2 - Ifsttar (France)

**5.00 pm**

## **End of the day**

**7.45 pm**

**3-hour evening dinner cruise on the river Seine**

# Day 2: Tuesday 21st March 2017

8.30 am Registration - Coffee

9.00 am Keynote speech

**Mind wandering as spontaneous thought: A dynamic framework**

Christoff Kalina (1)

1 - University of British Columbia (Canada)

10.00 am Parallel sessions

## 3A - Distraction and automated driving

Chairman: Martin BAUMANN

**Effect of visual distraction on response time for lane change with partially automated vehicle**

Hagiwara Toru (1), Shimizu Kazuyuki (1), Suzuki Yutaro (1), Iwasa Tasuya (2), Aokuyama Haruko (2)

1 - Hokkaido University (Japan), 2 - Honda R&D Co. (Japan)

**The effects of mental workload and duration of automated driving on driver behaviour**

Bueno Mercedes (1), Dogan Ebru (1), Hadj Selem Fouad (1), Boverie Serge (2), Monacelli Eric (3), Guillaume Anne (4)

1 - Institut VEDECOM (France), 2 - Continental Automotive SAS (France), 3 - Université Versailles Saint-Quentin (France), 4 - Laboratory of Accident Analysis, Biomechanics, and human behavior (France)

**Exploring the behaviour of distracted drivers during different levels of automation in driving**

Large David R. (1), Banks Victoria A. (1), Burnett Gary (1), Baverstock Sarah (2), Skrypchuk Lee (2)

1 - The University Of Nottingham (United Kingdom), 2 - Jaguar Land Rover Research (United Kingdom)

## 3B - Driver distraction

Chairwoman: Maud RANCHET

**When motion and color compete for selective attention, motion induces a stronger distraction.**

Matias Jeremy (1), Quinton Jean-Charles (2), Colomb Michèle (3), Izaute Marie (1), Silvert Laetitia (1)

1 - Laboratoire de psychologie sociale et de psychologie cognitive (France), 2 - Laboratoire Jean Kuntzmann (France), 3 - Centre d'études et d'expertise sur les risques, l'environnement, la mobilité et l'aménagement (France)

**Do LED-advertising signs affect driver attention?**

Herrstedt Lene (1), Geibe Poul (1), Andersson Puk (1), Lund Belinda (1)

1 - Trafitec (Denmark)

11.00 am Coffee break

11.30 am Parallel sessions

## 4A - Phone distraction

Chairman: Jeff CAIRD

**Factors influencing usage of extended functionalities on smartphone while driving**

Bruyas Marie-Pierre (1), Myriam Hugot (1), Hugues Julliand (1)

1 - Ifsttar, Laboratoire Ergonomie et Sciences Cognitives pour les Transports (France)

**The ESRA-project: towards a joint European monitoring system on road user's safety attitudes**

Meesmann Uta (1), Trotta Marie (1), Torfs Katrien (1), Van den Berghe Wouter (1)

1 - BRSI (Belgium)

## **Texting distracted driving behaviour among European drivers: influence of social norms and risk perception**

Pires Carlos (1), Tavares Sofia (2), Areal Alain (1), Trigosso José (1)

1 - Prevenção Rodoviária Portuguesa (Portugal), 2 - Universidade de Évora, Departamento de Psicologia (Portugal)

### **4B - Driver distraction**

Chairman: Paul ATCHLEY

#### **Distraction effects of in-car music; the proof is in the performance**

Brodsky Warren (1)

1 - Ben-Gurion University of the Negev, Department of the Arts (Israel)

#### **Effects of driver's anger state on driving performance and attention**

Techer Franck (1) (2), Jallais Christophe (1), Corson Yves (2), Fort Alexandra (1)

1 - Ifsttar, Laboratoire Ergonomie et Sciences Cognitives pour les Transports (France)

2 - LPPL, Laboratoire de Psychologie des Pays de la Loire (France)

#### **Differences in calibration of skills in distracted driving situations**

Tran Ashleigh (1), Horrey William (2), Atchley Paul (1)

1 - University of Kansas (United States), 2 - Liberty Mutual Research Institute for Safety (United States)

**12.30 pm**

**Lunch**

**1.30 pm**

**Keynote speech**

#### **Distraction and inattention on the road: biases and profits of a connected world**

Amalberti René (1)

1 - CEO FONCSI, Fondation pour une culture de sécurité industrielle (France)

**2.30 pm**

**Parallel sessions**

### **5A - Human machine interaction**

Chairman: Mike LENNE

#### **A predictive model of the visual demand associated with in-vehicle touchscreens**

Large David R. (1), Burnett Gary (1), Crundall Elizabeth (1), Van Loon Editha (1), Eren, Ayse L. (1), Skrypchuk Lee (2)

1 - The University Of Nottingham (United Kingdom), 2 - Jaguar Land Rover (United Kingdom)

#### **Exploring two interaction mechanisms for in-vehicle touch screens: Peripheral Vision and Muscle Memory**

Eren Ayse L. (1), Burnett Gary (1), Harvey Catherine (1), Large David R. (1)

1 - University of Nottingham (United Kingdom)

#### **Understanding drivers' strategies for engaging with in-vehicle technology while driving: An interview study**

Parnell Katie J. (1), Stanton Neville A. (1), Plant Katherine L. (1)

1 - University of Southampton (United Kingdom)

### **5B - Vulnerable road users**

Chairman: Mark VOLLRATH

#### **Driver's emotional state and vulnerable road user detection**

Lafont Alex (1), Rogé Joceline (1), Boucheix Jean-Michel (2)

1 - Ifsttar, Laboratoire Ergonomie et Sciences Cognitives pour les Transports (France), 2 - Laboratoire d'Etude de l'Apprentissage et du Développement (France)

**Attention allocation of cyclists in interaction with other road users**

Kircher Katja (1) (2), Ahlstrom Christer (1), Ihlström Jonas (1), Nygårdhs Sara (1)(3)

1 - The Swedish National Road and Transport Research Institute (Sweden), 2 - Linköping University, Department of Behavioural Sciences and Learning (Sweden), 3 - Linköping University, Department of Computer and Information Science (Sweden)

**Cognitive conspicuity of cyclists for motorists: the effect of knowledge concerning risky situations?**

Rogé Joceline (1), Navarro Jordan (2), Ndiaye Daniel (3), Aillerie Isabelle (3), Aillerie Stéphane (3), Vienne Fabrice (3)

1 - Ifsttar, Laboratoire Ergonomie et Sciences Cognitives pour les Transports (France), 2 - Université Lyon, Laboratoire d'Etude des Mécanismes Cognitifs (France), 3 - Ifsttar, Laboratoire Exploitation, Perception, Simulateurs et Simulations (France)

**3.30 pm Coffee break**

**4.00 pm Special session**

**6A - Development of a rating system for HMI design to reduce driver distraction**

**Development of a rating system for HMI design to reduce driver distraction**

Regan Michael A. (1)

1 - Australian Road Research Board (Australia)

**5.30 pm End of the day**



# Day 3: Wednesday 22<sup>nd</sup> March 2017

8.00 am Registration - Coffee

8.30 am Keynote speech

**Driver distraction: Some reflections on a path to understanding**

Regan Michael A. (1)

1 - Australian Road Research Board (Australia)

9.30 am Parallel sessions

## 7A - Driver characteristics

Chairwoman: Maud RANCHET

**Visual demands of traffic signs in control drivers and drivers with reading impairment**

Roca Javier (1), Tejero Pilar (1), Insa Beatriz (1)

1 - ERI-Lectura, Universidad de Valencia (Spain)

**How does distracted driving affect lateral position of older drivers?**

Papantoniou Panagiotis (1), Pavlou Dimosthenis (1), Antoniou Constantinos (2), Yannis George (1), Papadimitriou Eleonora (1)

1 - National Technical University of Athens (Greece), 2 - Technical University of Munich (Germany)

**The detrimental effect of mobile phone use on the driving competence of patients with neurological diseases affecting cognitive functions**

Pavlou Dimosthenis (1), Papantoniou Panagiotis (1), Yannis George (1), Papageorgiou Sokratis (2)

1 - National Technical University of Athens (Greece), 2 - National and Kapodistrian University of Athens (Greece)

## 7B - Counter-measures

Chairwoman: Katja KIRCHER

**Driving distractions? What is wrong with us?**

Kujala Tuomo (1)

1 - University of Jyväskylä (Finland)

**Research knows best, but how to communicate distraction measures practically in an industrial context**

Geitner Claudia (1), Birrell Stewart (1), Skrypchuk Lee (2), Biondi Francesco (3), Jennings Paul (1)

1 - WMG - University of Warwick (United Kingdom), 2 - Jaguar Land Rover, HMI Research Team (United Kingdom), 3 - University Utah (United States)

**Stimulating conversation: Engaging drivers in natural language interactions with an autonomous digital driving assistant to counteract passive task-related fatigue**

Large David R. (1), Burnett Gary (1), Antrobus, Vicki (1), Skrypchuk Lee (2)

1 - The University Of Nottingham (United Kingdom), 2 - Jaguar Land Rover (United Kingdom)

10.30 am Coffee break

11.00 am Plenary session

## 8A - Driver monitoring

Chairwoman: Anne GUILLAUME

**Detection of mind-wandering in driving: contributions of cardiac measurement and eye movements**

Pepin Guillaume (1), Jallais Christophe (1), Fort Alexandra (1), Gabaude Catherine (1)

1 - Ifsttar, Laboratoire Ergonomie et Sciences Cognitives pour les Transports (France)

### **Predicting when driver's state is going to become degraded**

Jacobé De Naurois Charlotte (1)(2), Stratulat Anca (2), Bourdin Christophe (1), Jean-Louis Vercher (1)  
1 - Institut des Sciences du Mouvement (France), 2 - Groupe PSA (France)

### **Short-term prediction versus detection of microsleep events**

Golz Martin (1), Sommer David (1), Krajewski Jarek (2)(3)  
1 - University of Applied Sciences Schmalkalden (Germany), 2 - Rhenish University of Applied Sciences Cologne (Germany), 3 - University of Wuppertal (Germany)

### **Computer vision algorithms for detecting secondary tasks in naturalistic driving studies**

Dellinger Flora (1), Robert-Seidowsky Myriam (1), Bernard Erwan (1), Guyonvarch Laurette (2), Guillaume Anne (2)  
1 - WASSA (France), 2 - Laboratoire d'accidentologie, biomécanique et comportement du conducteur (France)

12.30 pm

Lunch

1.30 pm

Parallel sessions

### **9A - Driver distraction**

Chairwoman: Marie-Pierre BRUYAS

#### **Observational study on driver secondary tasks in German cities**

Vollrath Mark (1), Huemer Anja Katharina (1)(2), Teller Carolin (1), Likhacheva Anastasia (2), Fricke Jana (1)  
1 - Technische Universität Braunschweig (Germany), 2 - Humboldt Universität zu Berlin (Germany)

#### **The impact of distraction on driving behaviour of car drivers in urban traffic. Results of a simulator-based study**

Boets Sofie (1), Pilgerstorfer Monika (2), Witzik Angelika (2), Torfs Katrien (1), Delzenne Julie (1), Kräutler Christian (2), Leblud Julien (1)  
1 - Belgian Road Safety Institute, Knowledge Centre (Belgium), 2 - KfV, Austrian Road Safety Board (Austria)

#### **Virtual eye height and display height influence visual distraction measures in simulated driving conditions**

Larsson Pontus (1), Engström Johan (1), Wege Claudia (1)  
1 - Volvo Group Trucks Technology, Advanced Technology & Research (Sweden)

#### **Literature review on observational studies on cell phone use while driving**

Huemer Anja Katharina (1), Vollrath Mark (1)  
1 - Technische Universität Braunschweig (Germany)

### **9B - Human machine interaction**

Chairman: Gary BURNETT

#### **A meta-analysis of in-vehicle and nomadic voice-recognition system interaction and driving performance**

Simmons Sarah (1), Caird Jeff (1), Steel Piers (1)  
1 - University of Calgary (Canada)

#### **Organization of information to reduce driver distraction**

Heymann Michael (1), Degani Asaf (2)  
1 - Technion - Israel Institute of Technology (Israel), 2 - General Motors (Israel)

#### **What does current research tell us about why drivers engage with technological distractions: A review**

Parnell Katie J. (1), Stanton Neville A. (1), Plant Katherine L. (1)  
1 - University of Southampton (United Kingdom)

**Phone manipulation at intersections with traffic lights: an observational study**

Diependaele Kevin (1), Focant Nathalie (1), Silverans Peter (1)

1 - Belgian Road Safety Institute (Belgium)

**3.00 pm Stephanie Binder memorial lecture**

**Real-time driver monitoring in the real world**

Lenné Michael (1)

1 - Seeing Machines (Australia)

**3.30 pm Coffee break**

**4.00 pm Special symposium**

**Priorities for research and countermeasures**

Regan Michael (1)

1 - Australian Road Research board (Australia)

**5.00 pm Closing session**

**5.30 pm End of the conference**

## Organising Committee

- Dr Corinne Brusque (Co-Chair), IFSTTAR, France
- Dr Marie-Pierre Bruyas (Co-Chair), IFSTTAR-TS2-LESCOT, France
- Adjunct Prof Michael Regan (Co-Chair), ARRB, Australia
- Adjunct Prof Trent Victor (Co-Chair), Volvo Cars/ SAFER, Sweden
- Dr Christophe Jallais, IFSTTAR-TS2-LESCOT, France
- Dr Alexandra Fort, IFSTTAR-TS2-LESCOT, France
- Dr H el ene Tattegrain, IFSTTAR-TS2-LESCOT, France
- Lisa Knutsson, SAFER, Sweden
- Anna Nilsson-Ehle, SAFER, Sweden
- Soizick de Bagneaux, IFSTTAR, France
- Odette Chanut, IFSTTAR, France
- Nathalie Redout e, IFSTTAR, France
- Nicole Teillac, IFSTTAR, France
- Thierry Scaduto, IFSTTAR, France

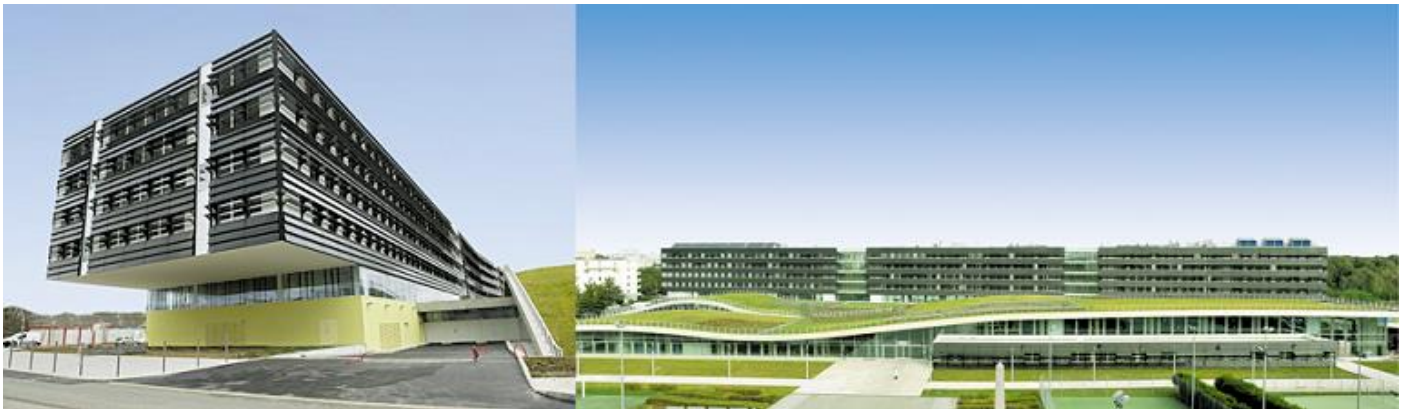
## Scientific Committee

- Adj. Prof Michael Regan (Co-Chair), ARRB, Australia
- Adj. Prof Trent Victor (Co-Chair), Volvo Cars/ SAFER, Sweden
- Dr Corinne Brusque (Co-Chair), IFSTTAR, France
- Dr Marie-Pierre Bruyas (Co-Chair), IFSTTAR-TS2-LESCOT, France
- Dr Motoyuki Akamatsu, AIST, Japan
- Dr Linda S. Angell, Touchstone Evaluations, Inc. and VTTI, USA
- Dr Martin Baumann, Ulm University, Germany
- Dr Peter Burns, Transport Canada, Canada
- Prof Jeff Caird, University of Calgary, Canada
- Prof Oliver Carsten, University of Leeds, UK
- Assoc Prof Peter Chapman, University of Nottingham, UK
- Dr Johan Engstr om, VTTI, USA
- Dr Greg Fitch, Virginia Tech Transportation Institute
- Dr Alexandra Fort, IFSTTAR-TS2-LESCOT, France
- Dr Christhard Gelau, Bundesministerium f ur Verkehr und digitale Infrastruktur (BMVI), Germany
- Prof Peter Hancock University of Central Florida, USA
- Dr Richard Hanowski, VTTI, USA
- Dr Joanne L. Harbluk Transport Canada, Canada
- Dr William Horrey Liberty Mutual, USA
- Dr Christophe Jallais, IFSTTAR-TS2-LESCOT, France
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- Dr Charlie Klauer, VTTI, USA
- Prof Josef Krems, University of Chemnitz, Germany
- Dr Terry Lansdown, Herriot Watt University, UK
- Prof John D Lee, University of Wisconsin-Madison, USA
- Dr Lena Nilsson, Swedish National Road and Transport Research Institute (VTI), Sweden
- Dr Christopher Patten, Swedish National Road and Transport Research Institute (VTI), Sweden
- Dr Mike Perel, NHTSA, USA (retired)
- Prof John Senders, University of Toronto, Canada
- Dr Alan Stevens, TRL, UK
- Prof David Strayer, University of Utah, USA
- Prof Heikki Summala, University of Helsinki, Finland
- Dr H el ene Tattegrain, IFSTTAR-TS2-LESCOT, France
- Jerry Wachtel, CPE, Veridian Group, USA
- Prof Ann Williamson, The University of New South Wales, Australia
- Dr Kristie Young, MUARC, Australia

The scientific committee wants to thank the following colleagues for their help in peer-reviewing paper: Jean-Louis Martin, Maud Ranchet and Joceline Rog e, from IFSTTAR.

# How to come to DDI2017

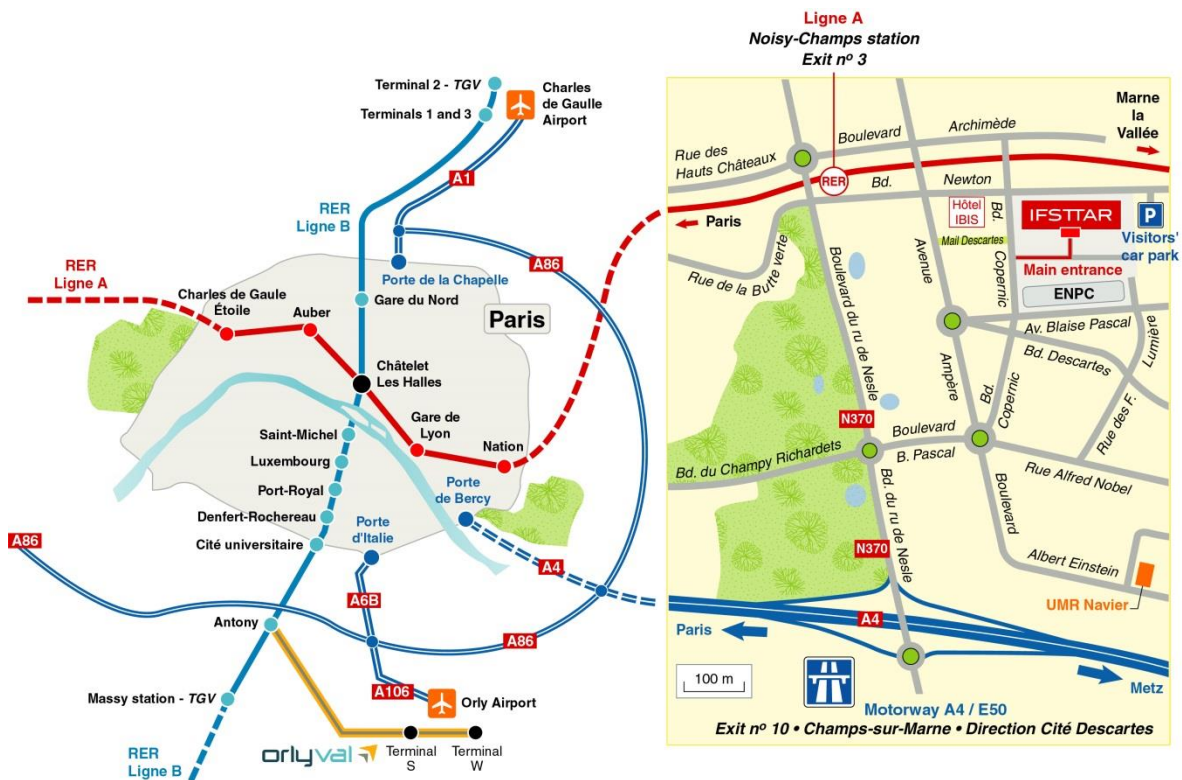
The DDI2017 conference will take place at IFSTTAR premises.



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