

# FINAL PROGRAMME

(20131114 version) of the 1<sup>st</sup> ECATS Conference on *Technical challenges for aviation in a changing environment*

## Monday 18 November 2013

13:00-14:00 Registration

14:00-14:15 Opening and conference start by ECATS Chair, Sigrun Matthes

14:15-15:00 First KEYNOTE speech: *Aviation Emissions and Environmental Impacts* by David S. Lee (MMU/CATE)

**15:00-17:30 SESSION I – Climate Impact of Aviation Emissions (including coffee break at 16:00):**

Chair: Jan Fuglestvedt / Rapporteur: DLR

15:00–15:20 Efficient evaluation of measures for air traffic climate optimization, by K. Dahlmann et al. (DLR)

15:20–15:40 Results of the FAA's Aviation Climate Change Research Initiative, by G. Brasseur (ACCRI)

15:40–16:00 Study of microphysical and radiative properties of contrail cirrus using LES, by R. Paoli (Cerfacs)

16:30–16:50 An update on radiative forcing and metrics from IPCC Working Group 1, by J. Fuglestvedt (CICERO)

16:50–17:10 Multi-model assessment of aviation climate impact in REACT4C, by S. Matthes (DLR)

17:10–17:30 Plenary / panel discussion

**19:00-21:00 Icebreaker (Leonardo Hotel)**

## Tuesday 19 November 2013

**09:00-12:00 SESSION II – Aviation Environmental Modelling and Databases (incl. coffee break 10:40)**

Chair: Urs Ziegler / Rapporteur: Paul Brok

09:00–09:40 Technical KEYNOTE: IMPACT & AAT: Towards enhanced European modelling capabilities by Ivan de Lépinay (EASA) and Laurent Cavadini (EUROCONTROL)

09:40–10:00 AERO-MS and airport environmental assessment options, by J. Middel (NLR) and T. Witte

10:00-10:20 Development and Implementation of a Tool Suite for Environmental and Economic Aviation Modelling for Policy Analysis, by S. Maertens et al. (DLR)

10:20–10:40 Clean Sky Technology Evaluator, by A. Junior (DLR)

11:00–11:20 Environmental modelling, by G. Fleming (Volpe)

11:20–11:40 Future year air quality and health impacts due to aviation growth under Changing Climate, by S. Arunachalam (University of North Carolina)

11:40–12:00 Plenary / panel discussion

**12:00-13:00 Poster Session (linked to Sessions I+II)**

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

**14:00-15:40 SESSION III – Alternative Fuels – Mitigation Options (incl. coffee break 15:40)**

Chair: Joanna Bauldreay / Rapporteur: Simon Christie

14:00–14:40 Technical KEYNOTE: Alternative Fuels by Mike Farmery (Shell Aviation)

14:40–15:00 Renewable jet fuels: Multiple pathways to commercial reality, by C. Bertelli (UOP)

15:00–15:20 EU ITAKA Project (Initiative Towards sustainable Kerosene for Aviation): Addressing challenges to bio jet fuel take off, by C. Velarde (SENASA)

15:20–15:40 Bio jet-fuel challenges and a new technology from “non-food”-resources and residues, by P. Haug (Greasoline)

**16:00-16:40 Poster Session (linked to Session III)**

16:40–17:00 About the suitability of alternative aviation fuels – from the European perspective, by M. Braun-Unkloff (DLR) and U. Riedel

17:00–17:20 Impact of fuel composition on the PM emissions profile for aircraft engines burning alternative fuels, by P. Lobo (Missouri S&T)

17:20–18:00 Plenary / panel discussion

## Wednesday 20 November 2013

**09:00-12:00 SESSION IV – Optimal Flight Trajectory: Climate & Safety (incl. coffee break 10:40)**

Chair: Sigrun Matthes / Rapporteur: Tomas Martensson

09:00–09:40 Technical KEYNOTE: SESAR & Environment, by Celia Rodrigues (SESAR JU)

09:40-10:00 REACT4C approach for climate-optimized aircraft trajectories, by S. Matthes et al. (DLR)

10:00–10:20 Reduction of the contribution of air traffic to climate change: REACT4C case study, by V. Grewe (DLR), C. Frömming, S. Matthes, S. Brinkop, O.A. Sovde, J. Fuglestvedt, T. Berntsen, E.A. Irvine, K.P. Shine, T. Champougny

10:20–10:40 RECREATE – Research on Cruiser Enabled Air Transport Environment, by T. Martensson (FOI), M. Hepperle, F. Holzapfel, J. C. Kuijper, D. Löbl, F. Morscheck, R. Nangia, R., H.G.Visser

11:00–11:20 Climate Impact Mitigation Potential given by Flight Profile and Aircraft Optimization, by A. Koch (DLR)

11:20–11:40 Energy efficient contrail mitigation strategies for reducing the environmental impact of aviation, by B. Sridhar (NASA), N. Y. Cheng

11:40–12:00 Plenary / panel discussion

**12:00-13:00 Show Case for Early Career Researchers**

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

**14:00-14:40 CSAs: FORUM-AE and CORE-JetFuel**

**14:40-15:40 REACT4C Stakeholder Meeting (1) separate registration is required**

**15:40-16:00 Poster Session (Session IV, ECR and CSA) & Coffee break**

**16:00-18:00 REACT4C Stakeholder Meeting (2)**

**16:00-18:00 Berlin City Guided Walking Tour**

**19:00-23:30 Networking Dinner (German Bundestag)**

## Thursday 21 November 2013

**09:00-12:00 SESSION V – Atmospheric Observation for Aviation Safety**

Chair: Andreas Petzold / Rapporteur: Peter Wiesen

09:00–09:40 Technical KEYNOTE: Status of volcanic ash observations in Europe from National Meteorological Services perspective, Deborah Lee (UK Met Office)

09:40-10:00 IAGOS – In-service aircraft for a global observing system, by A. Petzold (Jülich Research Centre)

10:00-10:20 In situ cloud measurements from commercial aircraft for hazard avoidance, by K. Beswick (University of Manchester), D. Gallagher, D. Baumgardner

10:20-10:40 Information on thunderstorm initiation, nowcast and forecast for aviation safety and efficiency, by D. Stich (DLR), C. Forster, A. Tafferner, M. Köhler, I. Sölch, T.Gerz,

10:40-11:00 Coffee break

11:00 -11:20 EARLINET – coordinated lidar observations for the characterization of volcanic aerosol, by G. Pappalardo (CNR-IMAA)

11:20-11:40 Aeronautics Lidar Applications - Airborne Remote Detection of CAT (Clear Air Turbulence), by P. Vrancken (DLR)

11:40-12:00 Plenary / panel discussion

**12:00-12:40 Final KEYNOTE speech: FAA Environmental and Energy Research Portfolio, by Mohan Gupta, Ph.D. (FAA)**

**12:40-13:00 Wrap-up**

**13:00-14:00 Lunch -> 14:00 End of Conference ->->**



## ECATS International Association

**From Network to Association** In 2005 a network of more than 100 researchers in the domain of aviation and environment was established within the Network of Excellence ECATS (Environmental Compatible Air Transport System). In 2010, the International Association, ECATS IASBL was established in Brussels, Belgium with the objective of helping to make future aviation sustainable.

**Association Objectives** Objectives are to build up expertise, exploit multi-disciplinary platform, organise exchange of knowledge, and to foster the technical, strategic and political debate.

**Association Members** Research establishments and academia leading in the field of aviation and environment are members of ECATS IASBL. Association is open to new partners with proven expertise in the field of aviation and environment.

## Conference Organisation

**Conference Session Structure** The event will be held in plenary sessions, to ensure the full exploitation of interdisciplinarity and synergies between involved disciplines and networking opportunities.

**Conference Location** The conference will be held in the historic Hotel Leonardo, in the heart of Berlin, walking distance from Alexanderplatz. The hotel offers excellent meeting facilities in the heart of this European Capital.

**Networking Dinner** The conference dinner will be held in the German Bundestag, which is a unique occasion to visit the former Reichstag. Reservation and confirmation beforehand is required, including valid passport data. Conference participants will be informed on formal requirements.

**Registration fees** Delegates: 390 €, Students plus ECATS Members: 290 € (all free of tax). It covers access to conference, documentation, lunches and coffee breaks, icebreaker (Mon 18 Nov 2013), and networking dinner (Wed 20 Nov 2013).

## Scientific Programme Committee

- Joanna Bauldreay, Shell, UK
- Paul Brok, NLR, NL
- Dominique Collin, SNECMA, FR
- Simon Christie, MMU/CATE, UK
- Jan Fuglestad, CICERO, NO
- Costas Helmis, NKUA, GR
- Tomas Martensson, FOI, SE
- Kostas Mathioudakis, NTUA, GR
- Andreas Petzold, FZ Jülich, DE
- Sigrun Matthes, DLR, DE
- Dave Raper, MMU/CATE, UK
- Peter Wiesen, BUW, DE
- Urs Ziegler, FOCA, CH

## ECATS International Association Contacts

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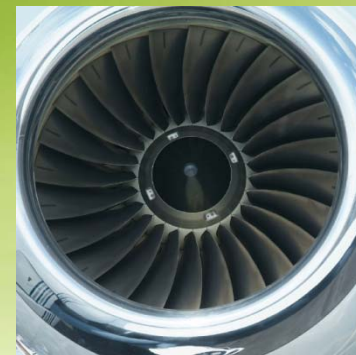
Or visit the programme on the web:  
[www.ecats-network.eu](http://www.ecats-network.eu)



# Programme 1<sup>st</sup> ECATS Conference

## Technical challenges for aviation in a changing environment

18-21 November 2013  
Leonardo Hotel, Alexanderplatz,  
Berlin, Germany



**ECATS** International  
Association

Environmentally Compatible Air Transport System