

# 10th EMAC Symposium

May 31 – June 2, 2021



## Agenda

Day 1 (May 31)	
	Chair: Simon Rosanka
9:00 – 9:30	Welcome & Talk 1: Patrick Jöckel (DLR) News and Views of the MESSy development
9:30-10:00	Invited Talk 1: Juan Anel (Universidade de Vigo) Climate models: Accessibility, Reproducibility and Code Quality
10:00-10:25	<b>Coffee break (in wonder.me)</b>
10:25-10:55	Lightning talks 1
10:55-12:15	Poster session 1
12:15 -13:00	<b>Lunch break</b>
	Chair: Laura Stecher
13:00-13:25	Talk 2: Astrid Kerkweg (FZJ): <i>The MESSy-basemodel family and its new kid MESSy DWARF</i> & Group photo
13:25-13:55	Lightning talks 2
13:55-15:20	Poster session 2
15:20-15:45	<b>Coffee break (in wonder.me)</b>
15:45-16:15	Invited Talk 2: Ivonne Anders (DKRZ) No fear of data - How data management supports research
16:15-17:00	<b>Icebreaker (in wonder.me)</b>
Day 2 (June 1)	
	Chair: Moha Diallo
9:00 – 9:30	Invited Talk 3: Alina Fiehn (DLR) Regional transport and chemistry modeling in support of aircraft measurements
9:30 – 10:00	Invited Talk 4: Marta Abalos (University Madrid) Future trends in upper troposphere / lower stratosphere tracer transport
10:00-10:15	<b>Coffee Break (in wonder.me)</b>
10:15-10:35	Talk 3: Holger Tost (JGU Mainz) <i>Developments at JGU: Ensembles, Vegetation &amp; Aeropt</i>
10:35-11:00	Lightning talks 3
11:00-12:15	Poster session 3

12:15 -13:00	<b>Lunch Break</b>
	Chair: Sergey Gromov
13:00-13:25	Talk 4: Matthias Nützel (DLR): <i>Developments in the radiation infrastructure: updates of cloudopt, aeropt and rad &amp;</i> Edward Charlesworth: <i>Lagrangian transport modeling in EMAC</i>
13:25-13:55	Lightning talks 4
13:55-15:20	Poster session 4
15:20-15:45	<b>Coffee Break (in wonder.me)</b>
15:45-16:15	Invited talk 5: Harald Bönisch (KIT): <i>The IAGOS(-CARIBIC) platform – What can be learned from (regular passenger) aircraft observations?</i>
16:15-18:00	<b>Social meeting (in wonder.me)</b>
<b>Day 3 (June 2)</b>	
	Chair: Ole Kirner
9:00 – 9:30	Invited Talk 6: Ulrike Lohmann (ETHZ) Overview of modelling activities with ECHAM/ICON-HAM at ETH Zurich
9:30 – 9:55	Talk 5: Mattia Righi (DLR): <i>Coupling aerosols to (cirrus) clouds in EMAC-MADE3</i> & Feijia Yin (TU Delft): <i>Developments for applications in air traffic</i>
9:55-10:20	<b>Coffee break (in wonder.me)</b>
10:20-10:50	Lightning talks 5
10:50-12:20	Poster session 5
12:20 -13:00	<b>Lunch break</b>
13:00-14:00	General Discussion
14:00 – 14:30	Wrap up

## **Poster session 1**

0	Patrick Jöckel	News and Views of the MESSy development
1	Mohamadou Diallo	Uncertainties in the response of stratospheric circulation and ozone to the Pinatubo eruption from climate models and observations
2	Hiroshi Yamashita	Multi-objective flight trajectory optimization in AirTraf
3	Stefan Versick	Accelerating I/O in ESMs using on demand filesystems
4	Christof Beer	Modelling mineral dust emissions and atmospheric dispersion with MADE3 in EMAC
5	Theodoros Christoudias	UTLS new particle formation with the NAN submodel
6	Sigrun Matthes	Analysis of aviation impacts on reactive species with MECO(n)
7	Konstantin Schaar	COsmogenic PROXies (COPROX): Simulations of the Atmospheric Transport and Deposition of Cosmogenic Isotopes as Proxies of Solar Activity and Atmospheric Dynamics
8	Thomas Reddmann	Impact of relativistic electrons on the chemistry in the middle atmosphere
9	Matthias Kohl	New Submodel EVER, explosive volcanic eruptions and UTLS aerosols

## **Poster session 2**

0	Astrid Kerkweg	The MESSy-basemodel family and its new kid MESSy DWARF
1	Simon Rosanka	Oxidation of low-molecular weight organic compounds in cloud droplets: global impact on tropospheric oxidants
2	Robert Eerenstein	Planned comparison of stratospheric H <sub>2</sub> O feedback in Lagrangian CLaMS and standard EMAC simulations
3	Swen Metzger	On the influence of aerosol hygroscopic growth on meteorology using model data — from global to urban scales
4	Markus Kilian	Updates of BIOBURN/ONEMIS for better representation of NO <sub>x</sub> emissions in MECO(n)
5	Joachim Fallmann	Implementation of TERRA_URB in MECO(n)
6	Monica Sharma	Modelling aircraft exhaust plumes with MADE3 double-box approach
7	Anna Nickl	Global modelling of methane isotopologues to investigate the renewed methane increase after 2007 and the simultaneous decline in d <sup>13</sup> C(CH <sub>4</sub> )
8	Christoph Brühl	Stratospheric aerosol, new features (based on 2.54) and new satellite data
9	Andreas Bartenschlager	Tracer transport from the Asian Monsoon Anticyclone to the stratosphere in idealized simulations (EMIL)

### **Poster Session 3**

0	Holger Tost	Recent developments for EMAC and MECO(n) from JGU Mainz
1	Sergey Gromov	How well do we know our simulated tropospheric averages? Answers from the new submodel for domain integrals calculation and further diagnostic
2	Stergios Misios	Simulating effects of the 774 AD solar proton event on atmospheric electricity
3	Kerstin Hartung	Advancing MESSy towards Exascale – speeding up computations and writing of output
4	Jingmin Li	Clustering of global aerosols simulated with EMAC-MADE3 using a machine learning algorithm K-Means
5	Domenico Taraborelli	Atmospheric production of formic acid mediated by warm clouds
6	Roland Eichinger	An orographic gravity wave extension for EMAC and its effect on dynamics
7	Astrid Kerkweg	(Technical) News from the COSMO, COSMO/MESSy and MECO(n) world

## **Poster session 4**

0	Edward Charlesworth	Lagrangian and Eulerian Water Vapor Transport Schemes and their Radiative Differences
0	Matthias Nützel	Developments in the radiation infrastructure: updates of cloudopt, aeroport and rad
1	Pratik Rao	The analysis of NO <sub>x</sub> -O <sub>3</sub> effects from optimised air-traffic using algorithmic climate change functions
2	Federica Castino	Climate optimized trajectories in the European airspace: yearly variations of their characteristics
3	Jin Maruhashi	Clustering of ATTILA trajectories using a neuroscience algorithm for the characterization of emission transport pathways
4	Sabine Brinkop	Lagrangian development
5	Bastian Kern	High-resolution Simulations of Atmospheric CO <sub>2</sub> with ICON/MESSy
6	Marius Bickel	Contrail Cirrus in EMAC
7	Markus Kunze	What is the minimum spectral resolution to model the 11-year solar cycle response in global models?

## **Poster Session 5**

0	Mattia Righi	Exploring the uncertainties in the aviation soot-cirrus effect
0	Feijia Yin	Developments for Applications in Air Traffic
1	Laura Stecher	Estimating the Impact of the Radiative Feedback from Atmospheric Methane on the Climate Sensitivity
2	Mariano Mertens	Influence of drastic emission changes on air quality in Europe
3	Johannes Holke	Enabling dynamic adaptive mesh refinement in MESSy using the t8code library
4	Maike Hacker	What controls the diurnal cycle of low-level stratiform clouds in the Namib region? - Analysis of conditions and processes with MESSYTENDENCY
5	Javier Perez	Influence of lightning and Transient Luminous Events in the chemistry of the atmosphere with MESSy
6	Jonas Sonnabend	ICON/MESSy-ClaMS – Representation of polar vortices
7	Patrick Peter	Assessment of contrail climate effects in the Northern Hemispheric Extratropics using Lagrangian Trajectories (ATTILA)