Reducing Environmental Footprint through transformative Multi-scale Aviation Planning

E-Newsletter | January 2024

One year of Sustainable Aviation Research with Refmap!

The latest issue of RefMap's winter newsletter is here! Learn about sustainable aviation studies, the UAS noise assessment workshop, an insightful interview, our blog articles, research on predicting drone noise and aircraft emissions, and our plans to enhance Computational Fluid Dynamics (CFD) simulations.

We invite you to **follow us** on our channels to stay updated on all the project's activities.

Enjoy your reading!

www.refmap.eu

NEWS

RefMap partners meet with agriculture specialists for a drone flight demonstration

During a flight demonstration in the peat bog of Chat Moss in

Greater Manchester, UK organised and facilitated by RefMap's DronePrep team, RefMap's University of Salford team conducted preliminary observations on how various bird species reacted to the presence of heavy payload VTOL drones.

Read More

The ins and outs of the RefMap project by Sophia Kalakou

In this insightful interview, **Sofia Kalakou** from **ISCTE University** and **partner in the RefMap** project talks to Luisa Rego for EntreCampus magazine about our collaboration, the contribution of the RefMap project in the aviation industry and many more. Read it through to get all the insights!

Read More

SOCIAL MEDIA

In anticipation of the Women in Science Day on 11 February 2024, we are happy to share with you the social media campaign **#WomenInAviationScience.** It is a campaign co-created by **RefMap** and our sister project **ImAFUSA,** running on the social media channels of both projects**.** Follow the hashtag and read about the role of women in this research topic as well as the contribution of women from the partners' organisations to both projects.

Follow #WomenInAviationScience on LinkedIn

Follow #WomenInAviationScience on X (Twitter)

PUBLICATIONS

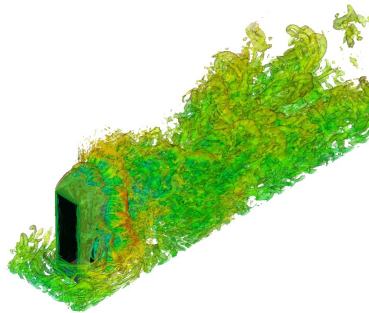## "Noise from Unconventional Aircraft: A Review of Current Measurement Techniques, Psychoacoustics, Metrics, and Regulation"
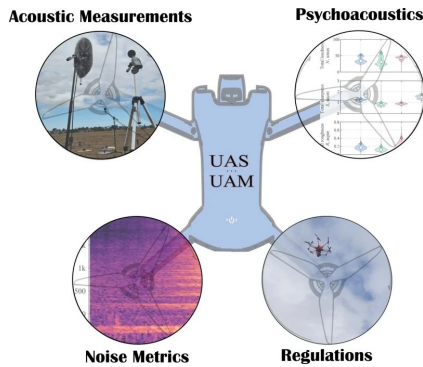
Read the newly published scientific work "Noise from Unconventional from our RefMap partner, the University of Salford.

Learn more

"Auto-tuning Multi-GPU High-Fidelity Numerical Simulations for Urban Air Mobility"

A new research paper entitled "Auto-tuning Multi-GPU High-Fidelity Numerical Simulations for Urban Air Mobility" from RefMap partners, the Institute of Communication and Computer Systems (ICCS) and Kungliga Tekniska Hoegskolan (KTH), was accepted for publication in the DATE conference, the prestigious Design, Automation, and Test in Europe Conference.

Learn more

"Robust Climate Optimal Flight Planning: Identifying "Win-Win" Solutions" & "Conflict Resolution of Climate Optimal Trajectories using Reinforcement Learning"

Dive into two interesting scientific papers presented at the Aerospace Europe Conference 2023 in Lausanne by the partners of the RefMap project from Carlos III University of Madrid (UC3M).

Learn more

EVENTS

RefMap presents research work at the ECATS Conference

RefMap's partners had the opportunity to participate in the **4th ECATS Conference** on "Making aviation environmentally sustainable" on 24-26 October 2023 at Delft, Netherlands and present their work related to the project.

Read More

Seminar on the noise produced by Unmanned Aircraft Systems by the University of Salford

Towards the environmental noise assessment of Unmanned Aircraft Systems operations

Dr Antonio J Torija Martinez

Dr Antonio José Torija Martínez, an Associate Professor at our partner university, the University of Salford, recently delivered a seminar at the Institute of Sound and Vibration Research (University of Southampton, UK) on 23 October 2023. The seminar was related to the RefMap project, which aims to develop tools and insights for optimizing the Unmanned Aerial Systems (UAS) trajectories to

reduce the impact of community noise.

Read More

BLOG

HPC optimisation techniques in the service of efficient CFD Simulations
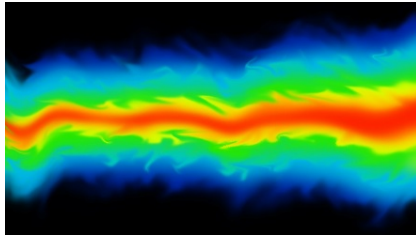
Read how RefMap Project plans to optimise Computational Fluid Dynamics (CFD) simulations by adopting one of the most recent GPU-enabled highly scalable solver.

Learn more

Predicting drone noise and aircraft emissions for RefMap | An effort to reduce UAVs' environmental and noise impact
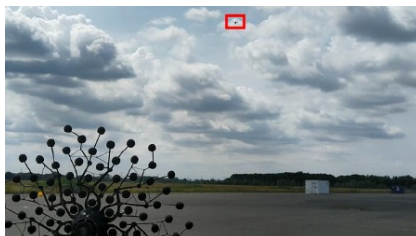
Read about how the Aircraft Noise and Climate Effects (ANCE) section from the project partner, TU Delft, will develop models to help predict and optimise aircraft and drone trajectories. They aim to reduce the environmental and noise impact of future UAV operations in rural and urban communities.

Learn more

AgentFly ATM simulation preparation for RefMap project integration | ATM traffic reference scenario

Check how the simulation system of AgentFly together with the expertise from Universidad DE Carlos III de Madrid (UC3M) – both partners in RefMap – work on the preparation of an ECAC-

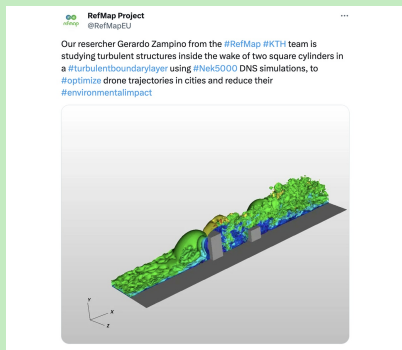wide ATM traffic reference scenario. The reference scenario is used to compare the RefMap project's proposed solutions with the current state of ATM traffic.
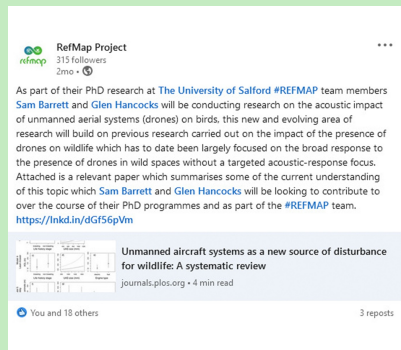
Learn more

NEWS DIGEST

All eyes are on! Bits & pieces of RefMap project

RefMap Project
@RefMapEU

Our resercher Gerardo Zampino from the #RefMap #KTH team is studying turbulent structures inside the wake of two square cylinders in a #turbulentboundarylayer using #Nek5000 DNS simulations, to #optimize drone trajectories in cities and reduce their #environmentalimpact

Inside the turbulent structures →

RefMap Project
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As part of their PhD research at The University of Salford #REFMAP team members Sam Barrett and Glen Hancocks will be conducting research on the acoustic impact of unmanned aerial systems (drones) on birds, this new and evolving area of research will build on previous research carried out on the impact of the presence of drones on wildlife which has to date been largely focused on the broad response to the presence of drones in wild spaces without a targeted acoustic-response focus. Attached is a relevant paper which summarises some of the current understanding of this topic which Sam Barrett and Glen Hancocks will be looking to contribute to over the course of their PhD programmes and as part of the #REFMAP team.
https://lnkd.in/dGf56pVm

Unmanned aircraft systems as a new source of disturbance for wildlife: A systematic review
journals.plos.org • 4 min read

You and 18 others   3 reposts

Acoustic impact of drones on birds →

RefMap Project
@RefMapEU

On 13/10/23 an exciting bioacoustics workshop was hosted by #REFMAP partner @SalfordUni which brought together collaborators across a diverse range of disciplines from across the world to discuss the topic of advancing noise impact assessments for birds.

2:37 PM · Nov 10, 2023 · 45 Views

Bioacoustics workshop →

RefMap Project
@RefMapEU

Last week on 5-6 October, @AETUDelft hosted the General Meeting of the RefMap project. Thanks to all attendees for their involvement!

1:52 PM · Oct 9, 2023 · 100 Views

RefMap partners getting together →

RefMap Project
@RefMapEU

The @AETUDelft section at @tudelft in partnership with @RefMapEU Project is performing aircraft exhaust plume simulations to assess the effects of civil aircraft emissions on the local air quality in the vicinity of airports. #HorizonEurope #uam #climate #sustainability #atm

12:56 PM · Dec 4, 2023 · 69 Views

Effects of civil aircraft emissions on the local air quality →

PARTNERS

Learn More

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