VIDIS SUMMER SCHOOL 2022

Innovative methods in air pollution and atmospheric aerosols monitoring and modelling

4-day Summer School organized by the VIDIS project,
https://vidis-project.org/

5-8 July 2022
Borkovac
Ruma, Serbia

BACKGROUND AND AIM

The Summer School is organized as part of the H2020 VIDIS project, and it will showcase the most recent research and development activities related to air quality and atmospheric aerosols. VIDIS summer school aims to present innovative methods and tools in air quality and atmospheric aerosols monitoring, modelling and management. The summer school will provide participants with both theoretical knowledge and hands-on experience in relation to low-cost PM sensors, and other sensing technologies for air quality management and control.

SUMMER SCHOOL PARTICIPATION BENEFIT

Participants will have an opportunity:

- To use air quality low-cost sensors/devices developed by the VIDIS partners and related projects and make sense of the collected data through visualization platforms. A team of VIDIS project participants will be there to guide participants throughout these exercises.

- To follow remotely and participate in experiments with aerosol mass spectrometers (AMS), particle in liquid sampler (PILS), and to conduct (remotely) in situ measurements using scanning mobility and optical particle sizers.
- To perform calibration of low-cost sensors using both common techniques and state-of-the-art machine learning approaches.
- To demonstrate data fusion technologies that utilize measurement data of different temporal and spatial resolution e.g. satellite data and ground-level PM data
- To present their own research through poster(s).

WHO SHOULD ATTEND

VIDIS summer school is expected to host a total of 20 participants from various countries. For attendees cost of accommodation and meals will be covered by the VIDIS project. Emphasis will be put on the participation of PhD students, Early-Stage Researchers, and young researchers involved in air quality and atmospheric aerosols studies, low-cost and remote sensing technologies, and the application of advanced tools for air quality monitoring and modelling. In addition, summer school is aimed at air quality experts, e.g. developers and operators of existing monitoring stations to learn about innovative sensor technologies as well as network providers and app developers interested in offering new applications and advanced services.

Attenders will be selected based on the relevance of the summer school to their research activities and general work, as well as to ensure gender balance and geographic diversity.

REGISTRATION PROCEDURE

The VIDIS Summer School involves a separate registration and a selection procedure. Registration is free of cost, but seats are limited. You are eligible to participate ONLY if you have received (and accepted) the official invitation from the VIDIS project, to be expected at the beginning of May 2022.

Applications open on April 8th, 2022.
Applications close on May 8th, 2022.
Applicant's notification of acceptance: May 15th, 2022

Each applicant has to apply via an online form, https://forms.gle/hjkHz869mzCSCD8E8 , providing personal info plus the following documents (in addition to filling-in the registration form, the documents should be sent via email to webiopatr.prj@vin.bg.ac.rs :

1. A motivation letter (max 1 page) briefly introducing the applicant, interest in the topics of the workshop, motivation, and expected benefits to the participant from VIDIS Summer School especially in relation to own studies and career goals and/or the possibility to disseminate Summer School topics through education or awareness sessions within their own institute or countries. Applicants should also include a title of the poster that they will present, which can discuss their current research activities.
2. The applicant's CV including relevant publications.

PROGRAMME

	Tuesday, July 5th	Wednesday, July 6th	Thursday, July 7th	Friday, July 8th
	Low-cost PM sensors	**Advances PM measurements**	**Advanced computational methods including machine learning**	**Understanding and exploring satellite data**
7.30-8.30	Registration and coffee break			
8.30-9.00	Welcome, introduction to VIDIS summer school and presentation participants *(Dr Milena Jovašević-Stojanović)*			
9.00-10.00	Why measure air quality (*Dr Alena Bartonova*) Why measure with low-cost sensors (*Dr Milena Jovašević-Stojanović, Dr Miloš Davidović*)	Aerosol Mass Spectrometry *(Prof Zoran Ristovski or Dr Svetlana Stevanovic)*	Low-cost sensors device modelling and calibration functions. *(Dr Saverio de Vito)*	Ground-based and satellite remote sensing of atmospheric aerosols (*Dr Kerstin Stebel*)
10.00-11.00	User perspective of low-cost sensors *(Dr Alena Bartonova)*	Particle in the liquid sampling for oxidative potential measurement *(Dr Svetlana Stevanovic or prof. Zoran Ristovski)*	Theoretical introduction of MRL, ANN and RF and with examples of calibration derivation process *(Dr Sergio Ferlito)*	Aerosols observations and retrieved properties *(Dr Kerstin Stebel)*
11.00-12.00	Air pollution low-cost sensors and quality of measurements (*Dr Alena Bartonova)*	Remote experiment in QUT laboratory *(Dr Zoran Ristovski with QUT PhD students)*		Satellite based AOD and PM *(Dr Philipp Schneider, Dr Kerstin Stebel)*
12.00-14.00	Lunch and poster viewing	Lunch and poster viewing	Lunch and poster viewing	Lunch and poster viewing

Time				
14.00-15.00	Field experience of low-cost sensors application by VIDIS partners **(NILU, ENEA, QUT; VINCA)**	Data analyses in two groups of participants **(Prof Zoran Ristovski, Dr Svetlana Stevanovic)**	Introduction to advanced calibration, focus on global calibration **(Dr Saverio de Vito)**	Combination of satellite-based aerosol data with ground-based observations (**Dr Philipp Schneider**)
15.00-16.00	Field training by Vinca with KLIMERKO Pro (UNICEF Serbia) and Monica (ENEA) devices **(VINCA)**	Correlation between the data collected with different instruments **(Prof Zoran Ristovski, Dr Svetlana Stevanovic, Dr Miloš Davidović, Dr Danka Stojanović, Dr Duška Kleut)**	Practical exercises **(Dr Jean-Marie Lepioufle)**	Satellite data use exercise **(Dr Philipp Schneider)**
16.00-17.00 (18.00)	Introducing Python software environment and setting up the required software **(Dr Miloš Davidović)**	Conclusion and discussion **(Prof Zoran Ristovski, Dr Svetlana Stevanović)**	Paper preparation (VIDIS partners)	Satellite data use exercise **(Dr Kerstin Stebel)**
19.00-20.00	Dinner	Dinner	Dinner	Dinner