



# **WeBIOPATR 2021**

The Eighth International WEBIOPATR  
Workshop & Conference  
Particulate Matter: Research and Management

## **Abstracts of Keynote Invited Lectures and Contributed Papers**

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Vinča Institute of Nuclear Sciences  
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**ABSTRACTS OF KEYNOTE INVITED LECTURES AND  
CONTRIBUTED PAPERS**

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## 11.17 PRELIMINARY RESULTS FROM PM MOBILE MONITORING PILOT CAMPAIGN IN BOKA KOTORSKA BAY: PM LEVELS AND OBSERVED MODES IN ONSHORE AND OFFSHORE AREA

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**Background and Aims:** In the last decade s, the touristic income in Montenegro was largely focused on the cruising and nautical tourism sectors. This led to rapid modernization and development of the Boka Kotorska Bay, and its ports, notably Port of Kotor, protected by the UNESCO as natural and cultural heritage- However, increase in activities is also coupled with increase in environmental burdens, since cruises activities in urban coastal areas generate large amounts of pollution of different categories, including air pollutants, both in gas and particulate phase. Such activities can significantly contribute the amount of total suspended particles in ambient air, sometimes up to the 15%. Elevated levels of air pollution can influence human health and wellbeing, degrade ecosystem, damage natural and cultural heritage. Thus, characterizing air pollution in coastal urban areas is a paramount first step in mitigating its detrimental influence.

**Methods:** Measurement instrumentation setup included the following: PM concentrations for diameter of particles going from 10 nm to 420 nm in 13 size channels were detected using TSI NanoScan SMPS Model 3910; PM concentrations for diameter of particles going from 0.3  $\mu\text{m}$  to 10  $\mu\text{m}$  in 16 channels were recorded using TSI Optical particle sizer 3330; all measurements were georeferenced. The measurement campaign consisted of two parts realized in the summer (high) season. The onshore part was conducted using a vehicle, which covered coastal area of Boka Kotorska Bay, and offshore part of measurements was conducted using a small boat in the vicinity of berthing area in the Port of Kotor.

**Key results of the study:** Short preliminary mobile monitoring campaign enabled insights into levels and size distribution of particulate matters in the ambient air of the Boka Kotorska Bay and Port of Kotor. In addition to identifying local hotspots, this type of analysis provided additional insights into dominant modes (in terms of both number and mass concentration). Figure below shows examples of emission profiles recorded during the vehicle campaign (Fig. 1a), and small boat campaign (Fig. 1b). More specifically, figure represents peaks in number concentration in previously mentioned campaigns.

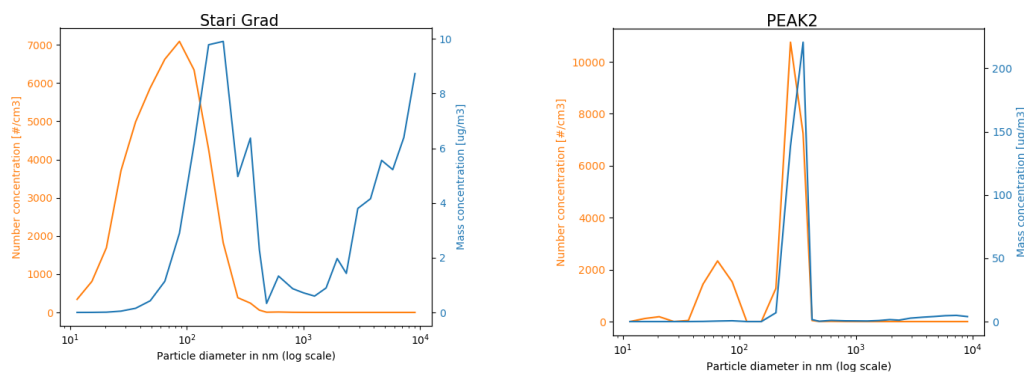


Figure 1. Examples of emission profiles for PM number concentration peaks a) recorded in vehicle campaign b) recorded in small boat campaign

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