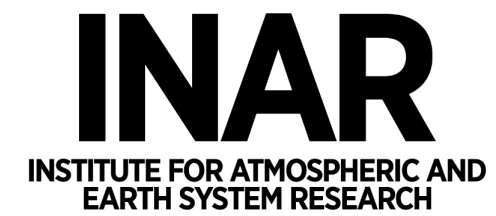




# Transformative climate services for decision-makers based on observational data

Wednesday 6 Dec. 2023, 16:45—18:15 UTC+4  
SE Room 6 & online

[icos-ri.eu](https://icos-ri.eu)



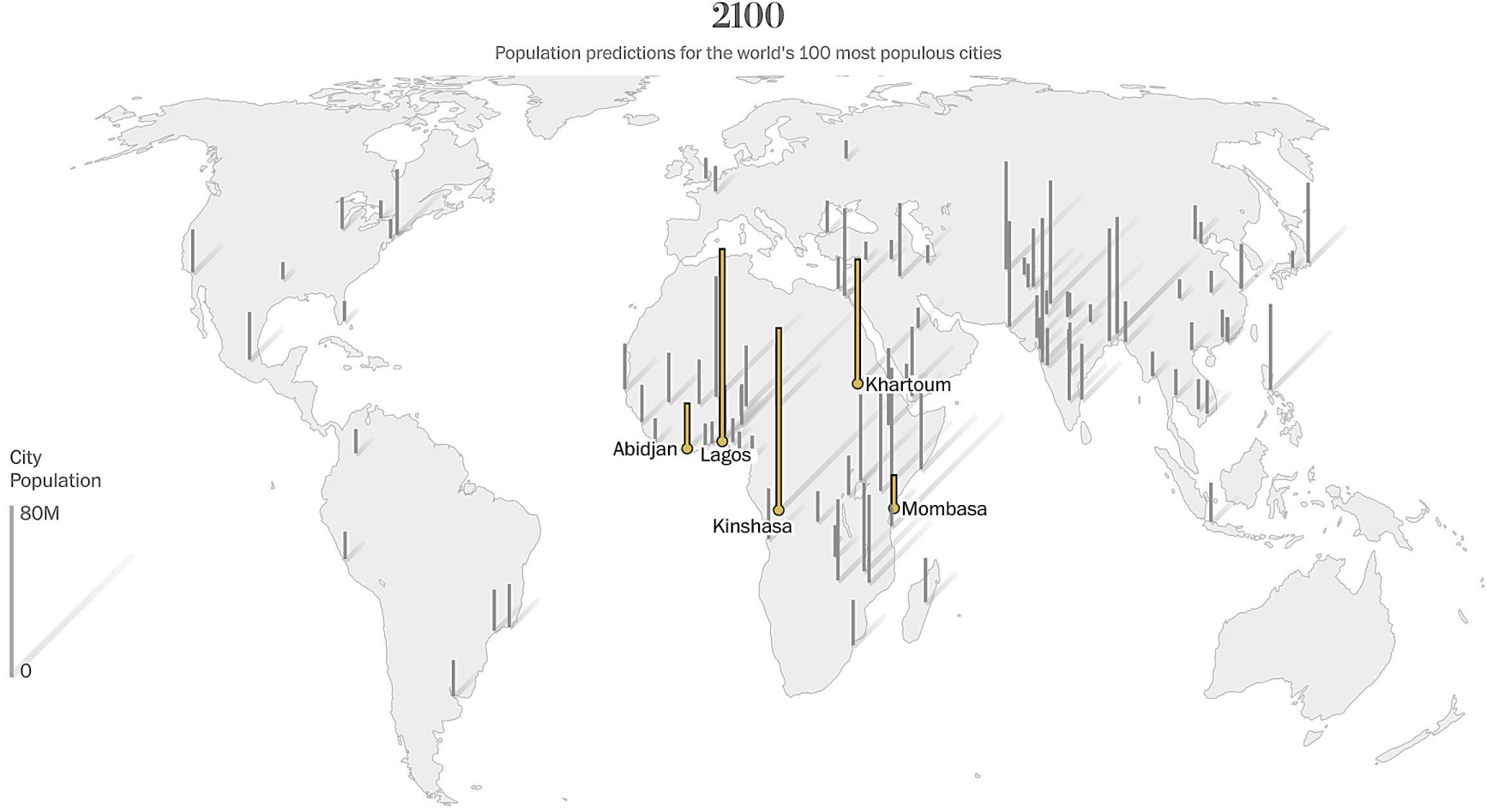
Comprehensive and long-term observations are  
needed to monitor energy transitions and  
urbanization

Tuukka Petäjä

6.12.2023



# Urbanization in the global south



**Knowledge** for **global** development, especially **global south**!

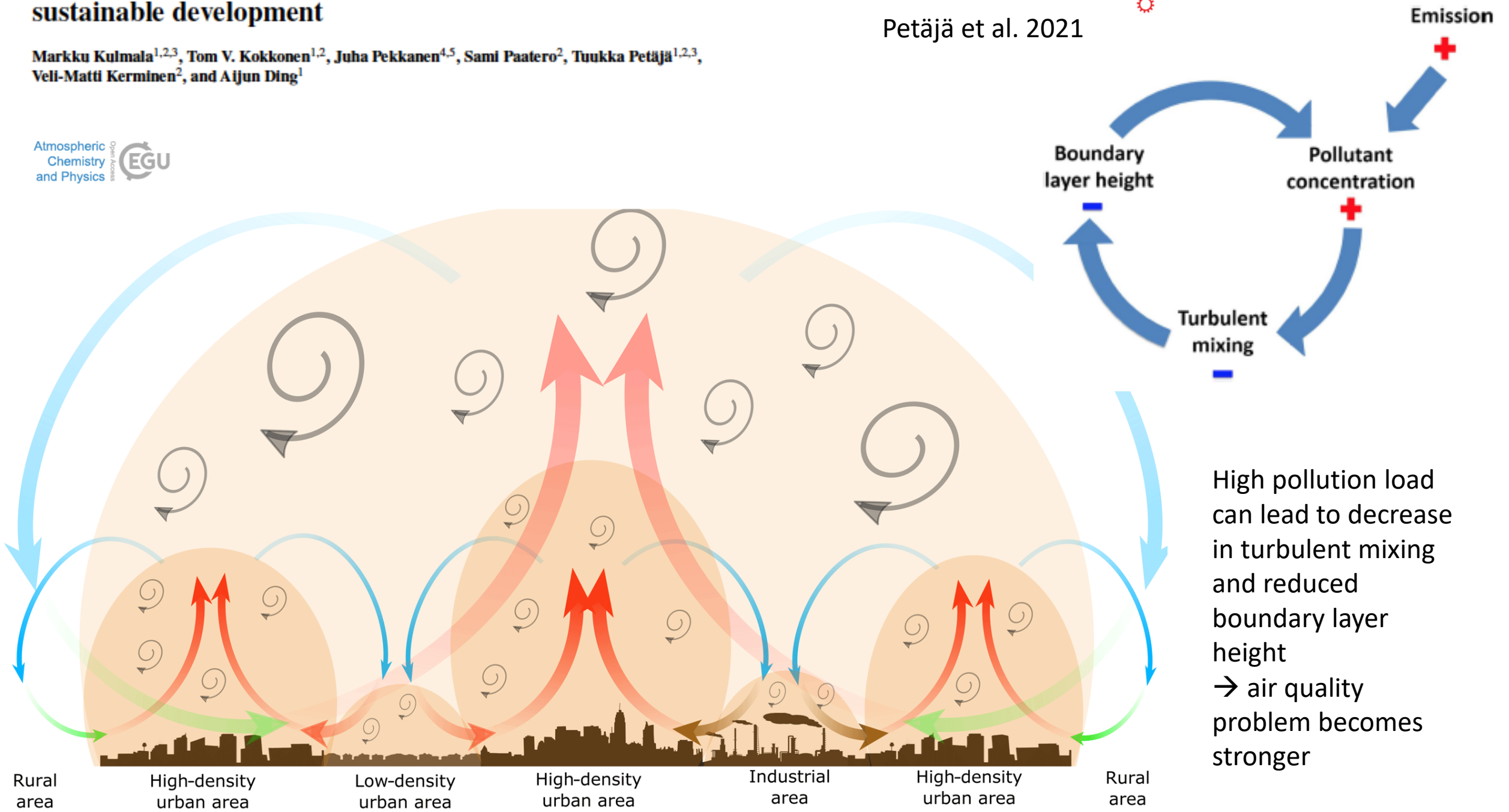
# Opinion: Gigacity – a source of problems or the new way to sustainable development

Markku Kulmala<sup>1,2,3</sup>, Tom V. Kokkonen<sup>1,2</sup>, Juha Pekkanen<sup>4,5</sup>, Sami Paatero<sup>2</sup>, Tuukka Petäjä<sup>1,2,3</sup>, Veli-Matti Kerminen<sup>2</sup>, and Aijun Ding<sup>1</sup>

Atmospheric  
Chemistry  
and Physics  
EGU

SCIENTIFIC REPORTS

Petäjä et al. 2021





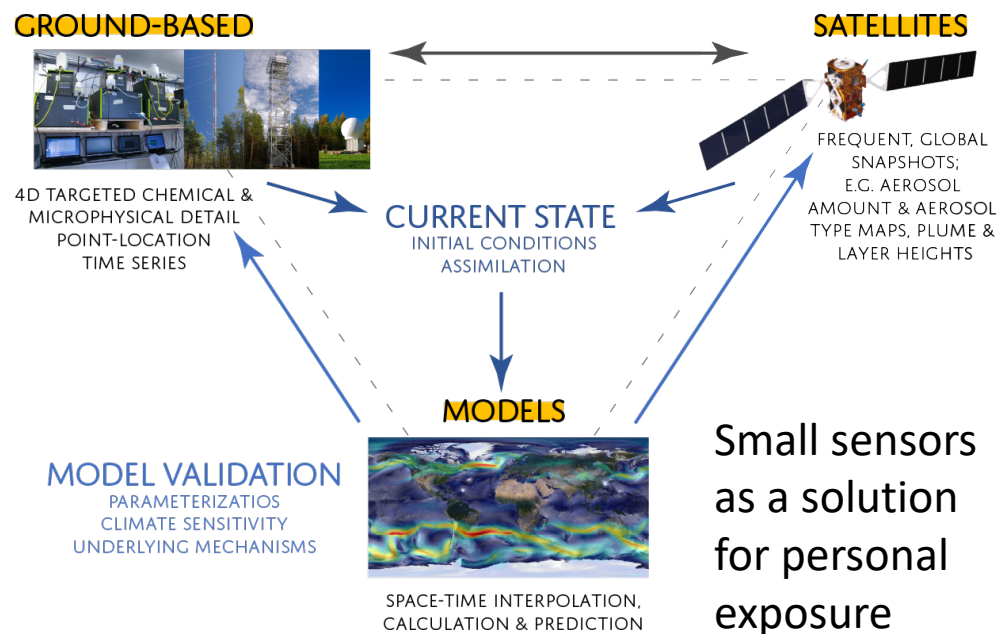


Air quality trailer arriving to Botsalano in 2006

- Co-location of thematic observations
- Harmonized methods
- Hierarchical measurement network
- Urban and background environments
- Cost-efficient instruments
- Satellites and models

**Transportable Aerosol Characterization Trailer with Trace Gas Chemistry: Design, Instruments and Verification**

T. Petäjä<sup>1\*</sup>, V. Vakkari<sup>1</sup>, T. Pohja<sup>2</sup>, T. Nieminen<sup>1</sup>, H. Laakso<sup>2</sup>, P.P. Aalto<sup>1</sup>, P. Keronen<sup>1</sup>, E. Siivola<sup>1</sup>, V.-M. Kerminen<sup>1,3</sup>, M. Kulmala<sup>1</sup>, L. Laakso<sup>3,4</sup>



Over 12 years of measurements at Welgegund, South Africa

Small sensors as a solution for personal exposure

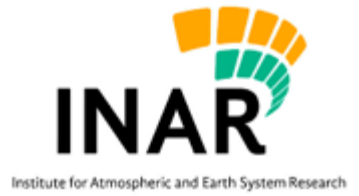






Towards  
coordinated  
continuous  
comprehensive  
Global Earth Observatory

**Contact:**  
Prof. Tuukka Petäjä,  
University of Helsinki  
[tuukka.petaja@helsinki.fi](mailto:tuukka.petaja@helsinki.fi)  
+358 50 41 55 278



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JANE JA AATOS  
ERKON SÄÄTIÖ

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