

Real practice is not a drill!

A case study on the participation of all classes in a running research project

ÉVA V. PESTINÉ RÁCZ

1TH INTERNATIONAL WEEK, FEBRUARY 2 – 5, 2015

„Smarter Transport”
Kooperatív közlekedési rendszerek
infokommunikációs támogatása

TÁMOP-4.2.2.C-11/1/KONV-2012-0012

Nemzeti Fejlesztési Ügynökség
www.ujszecsenyiterv.gov.hu
06 40 638 638

 **MAGYARORSZÁG MEGÚJUL**

 A projekt az Európai Unió támogatásával, az Európai Szociális Alap társfinanszírozásával valósul meg.

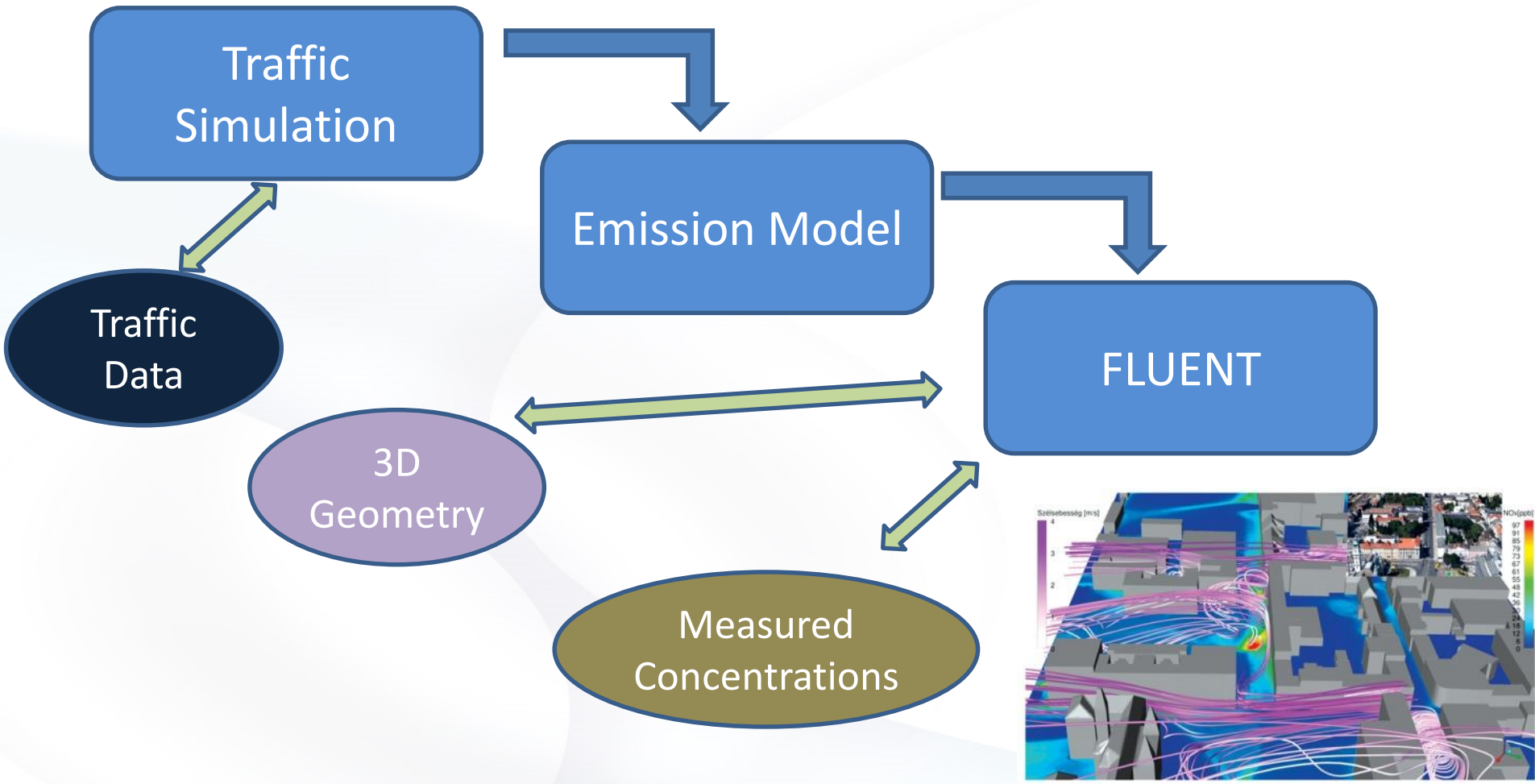
- Classical analytical laboratory (chemistry lab)
- Instrumental measurements (North Transdanubian Regional Environmental Protection and Nature Conservation Inspectorate)
- Biology, microbiology lab
- Noise measurement (field work)
- Ecology field practice (5 days in the woods)
- Visitations at sewage plants, waste management sites, factories
- PRACTICAL (min. 6 weeks)

Goals:

- Optimising urban traffic to minimize ambient air pollution

Modelling steps:

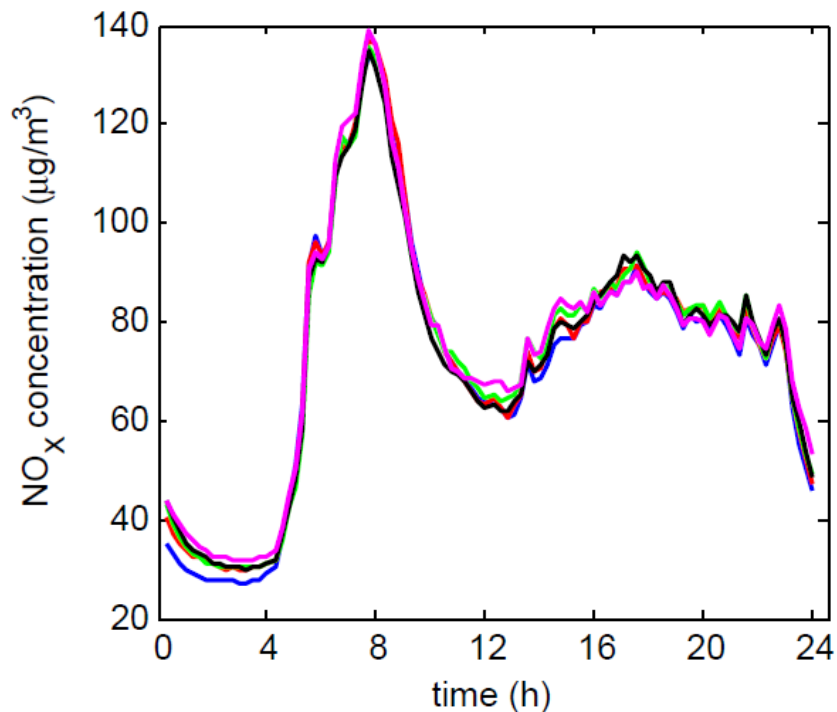
- Traffic model (VISUM, VISSIM)
- Emission from traffic (Coppert model)
- Diffusion model (FLUENT)
- Validation (monitoring data, field measurements)



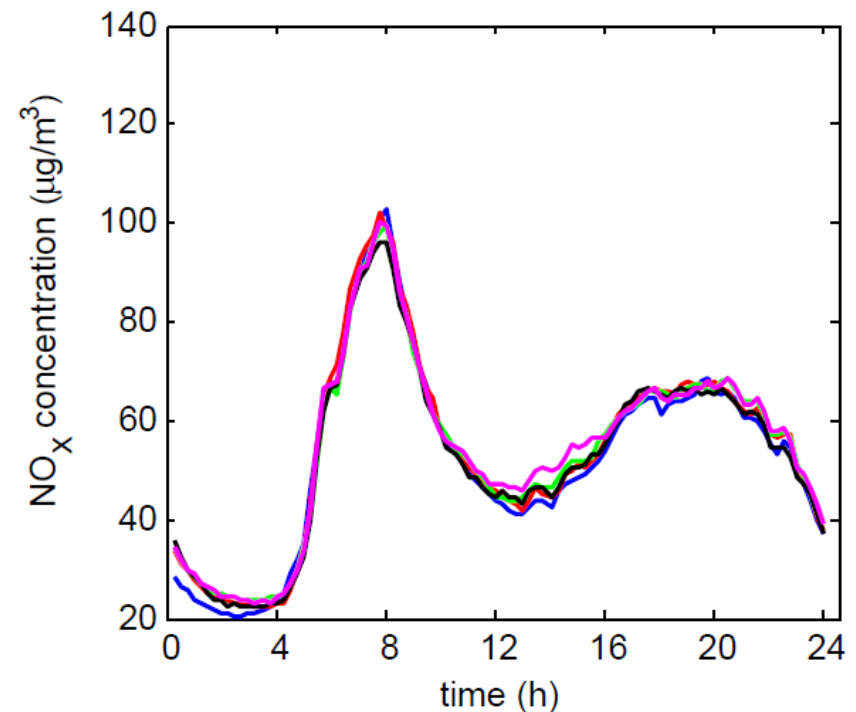
http://www.innoteka.hu/cikk/varosi_kozlekedes_iranyitasa_mso_eszkozokkal.1050.html

- capture daily profile
- fine scale spatial resolution, canyon study

Győr 1



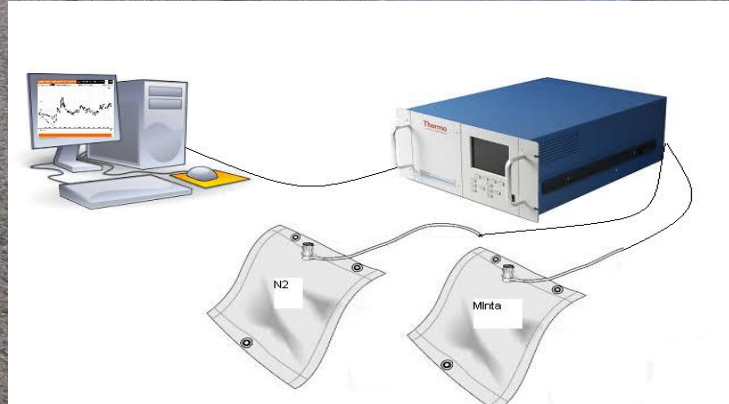
Győr 2



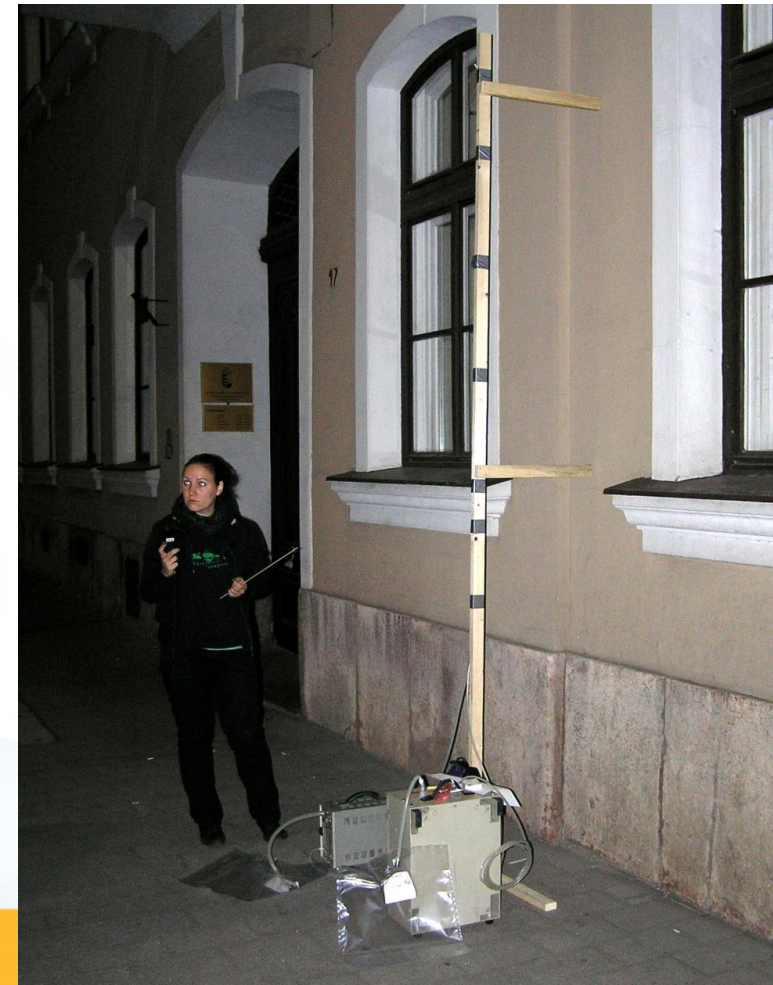
Methods

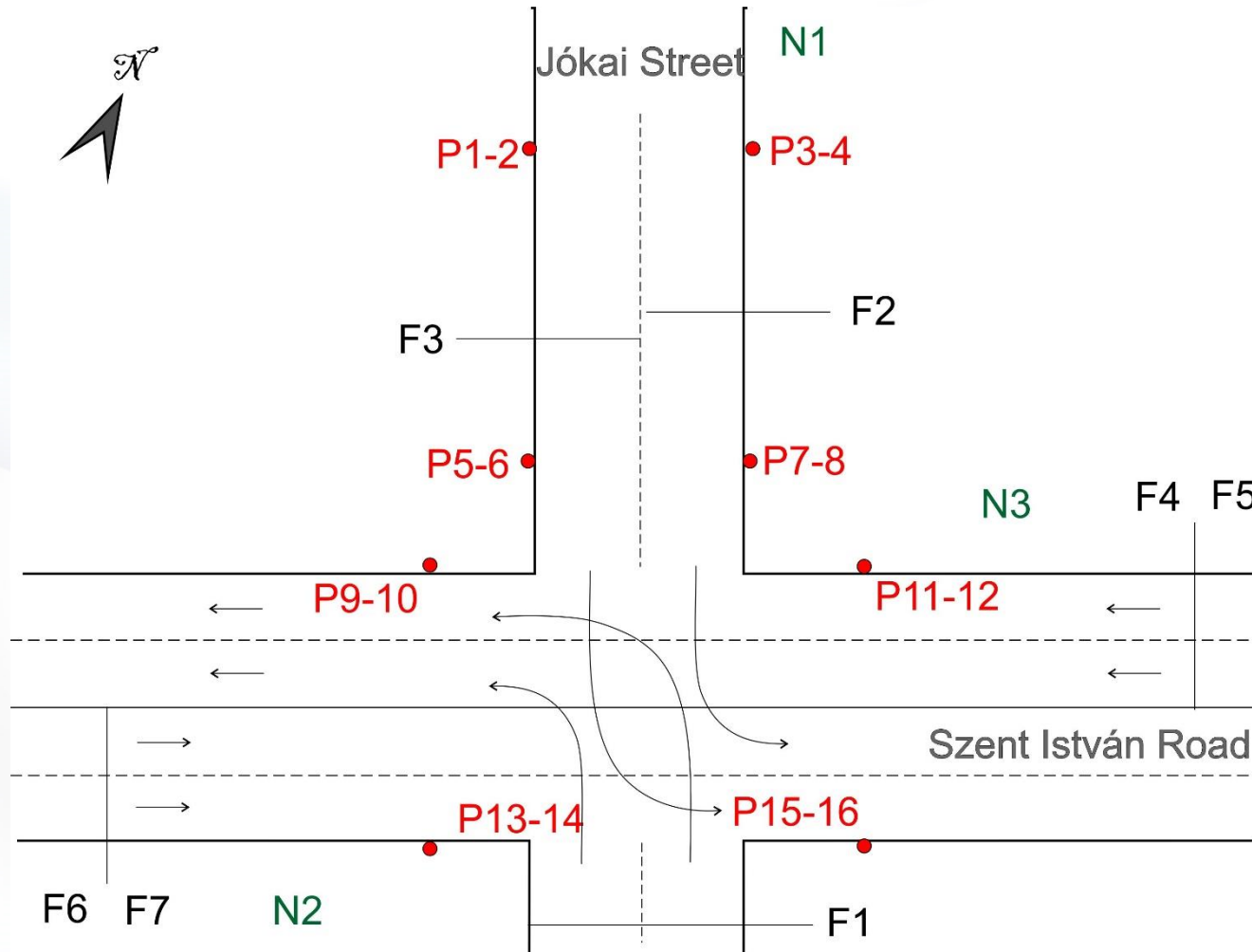


- + manual traffic counting
- + noise measurement
- + local wind (speed, direction), temperature

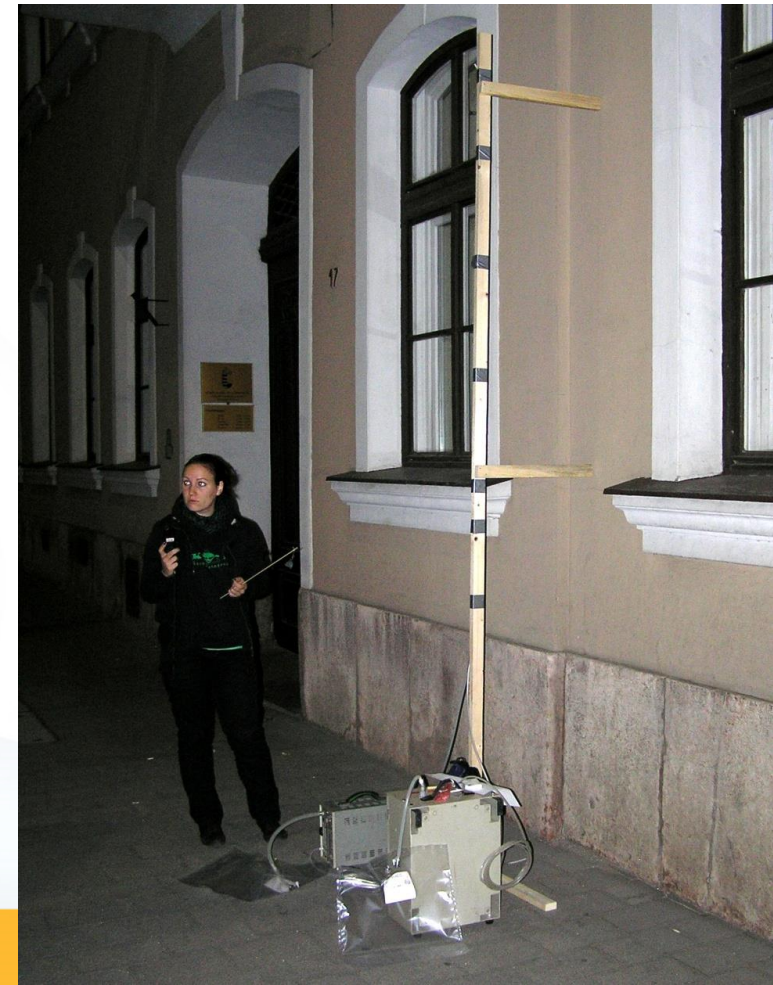


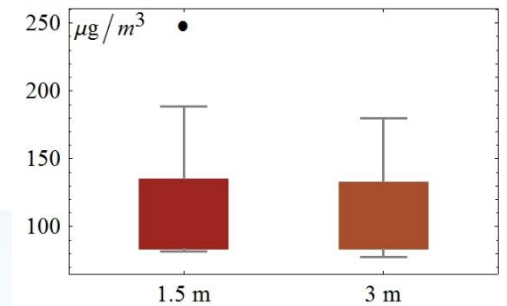
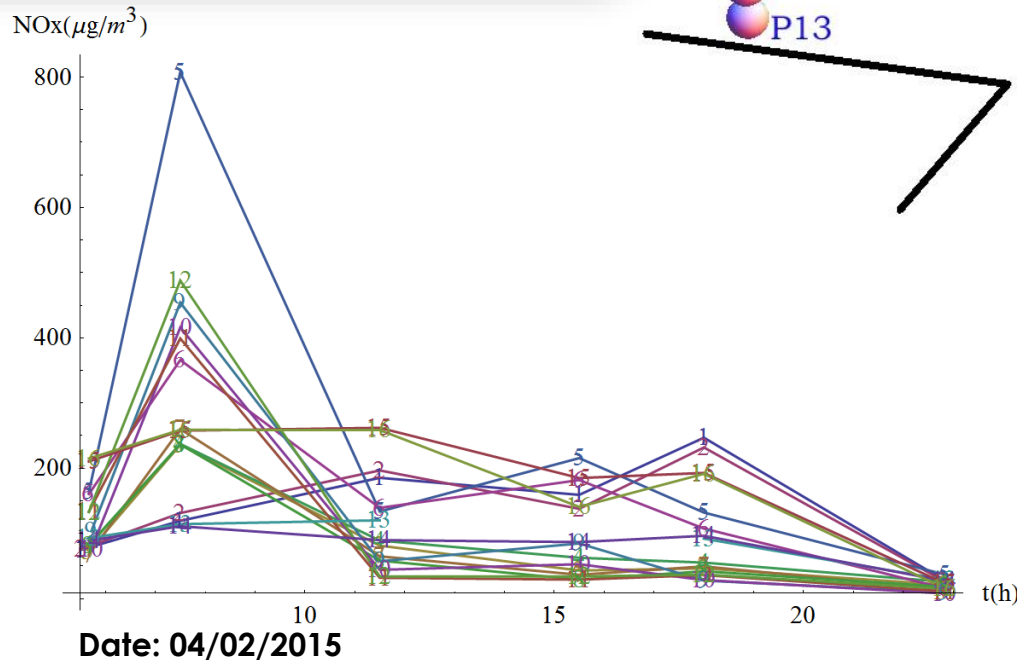
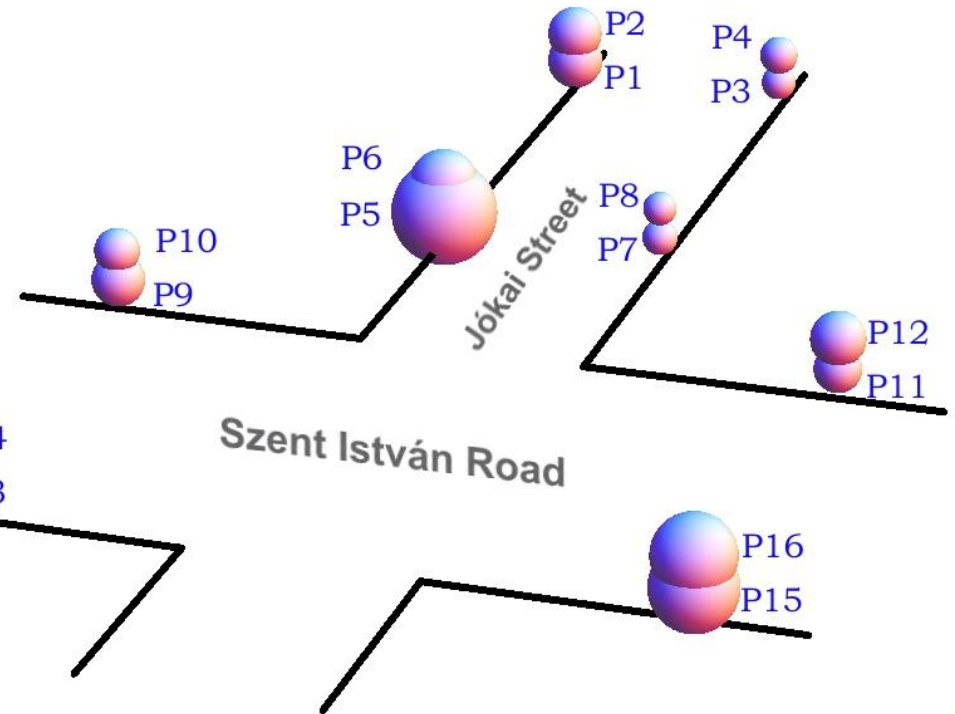
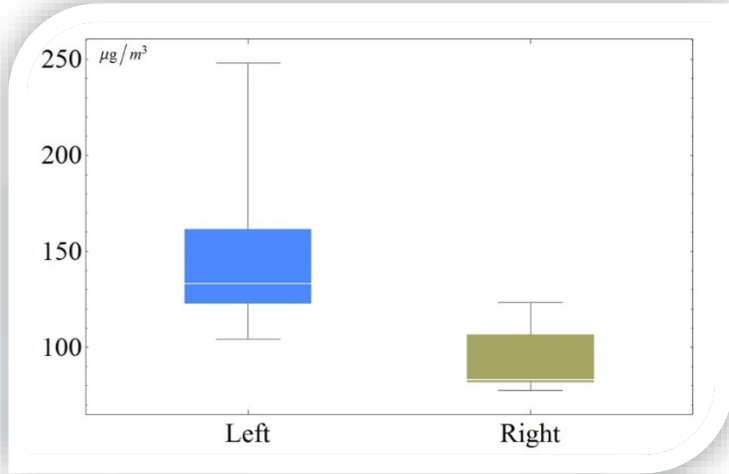
- „Street Canyon” – Szent István út – Jókai út, Győr
 - 2*8 sampling sites (1.5 m & 3m)
 - 6 air samples during the day
 - 18 hours manual traffic counting
 - 3 lecturers and 40+ students involved



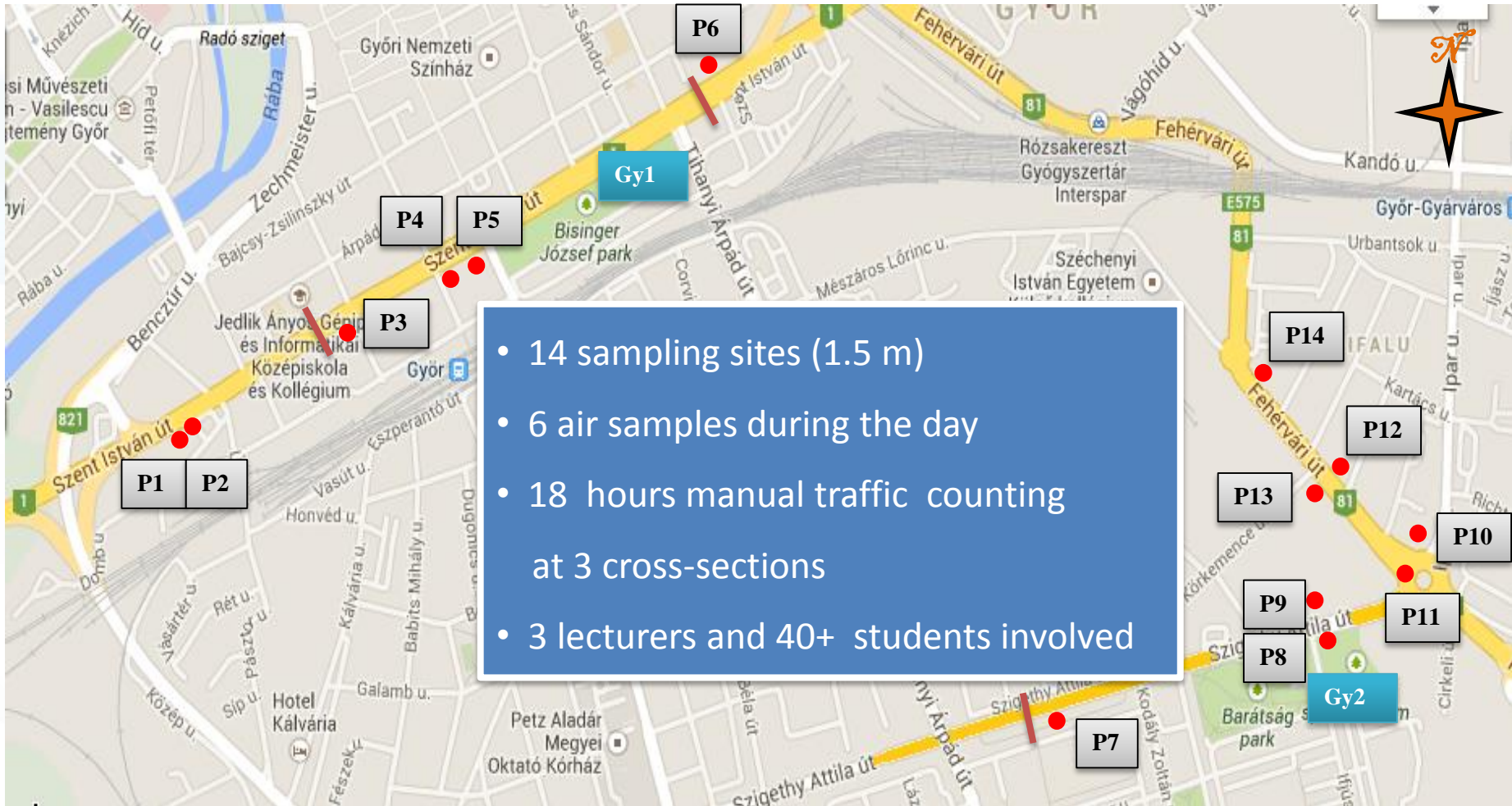


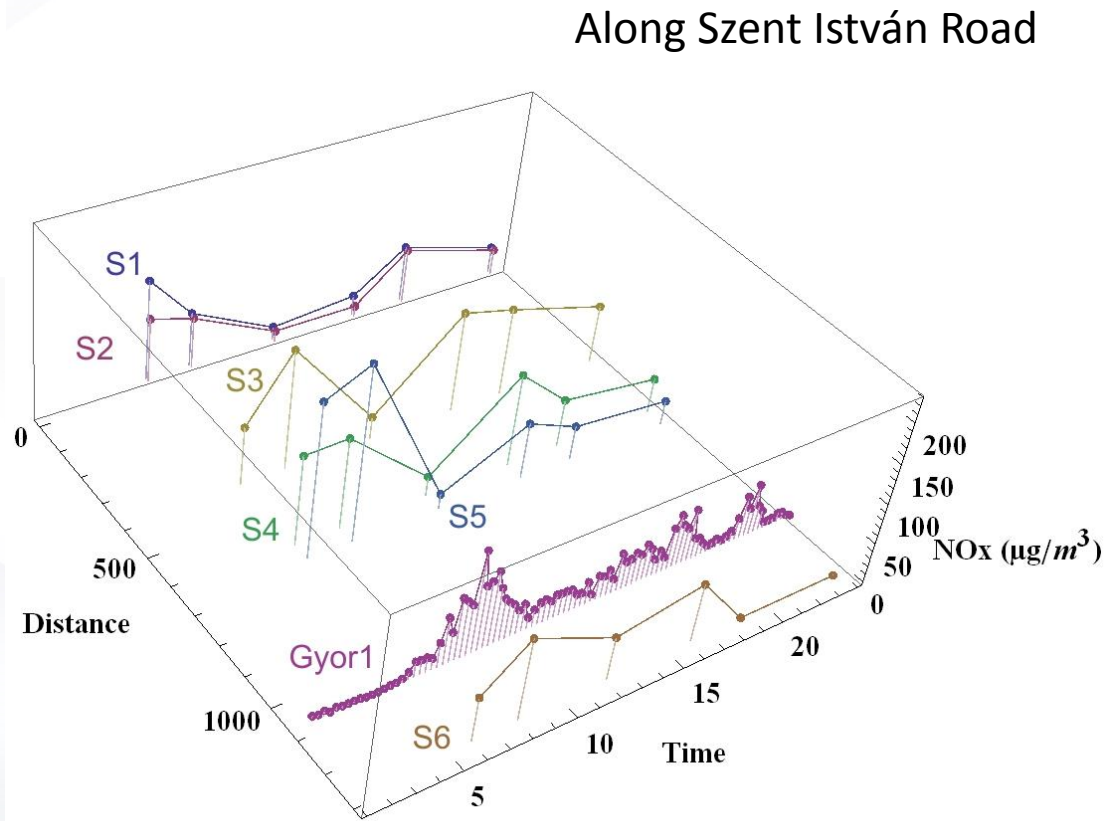
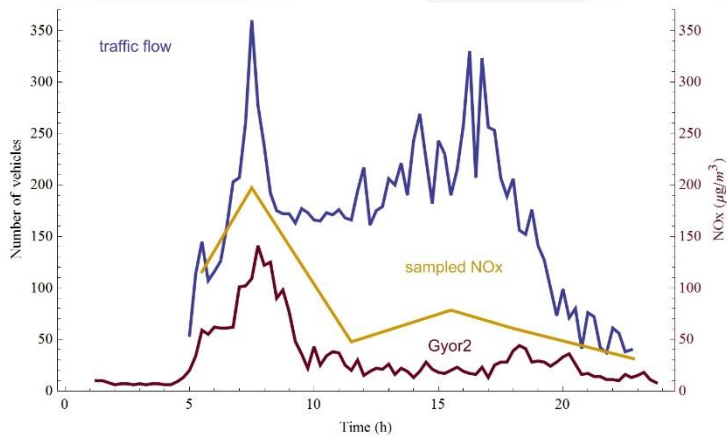
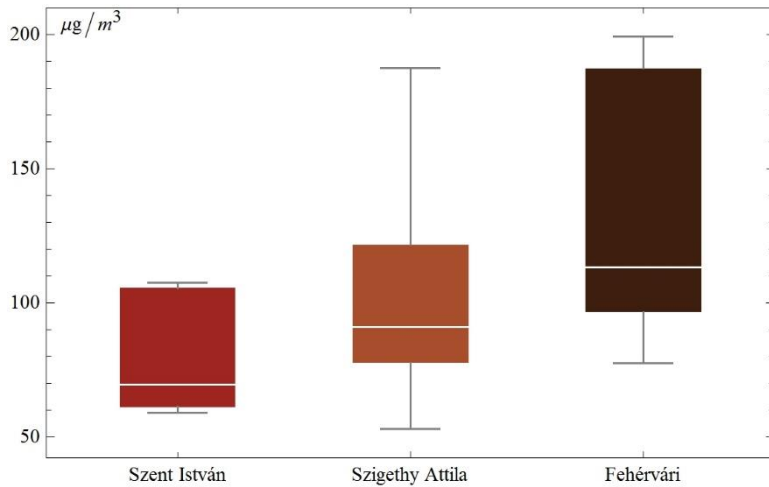
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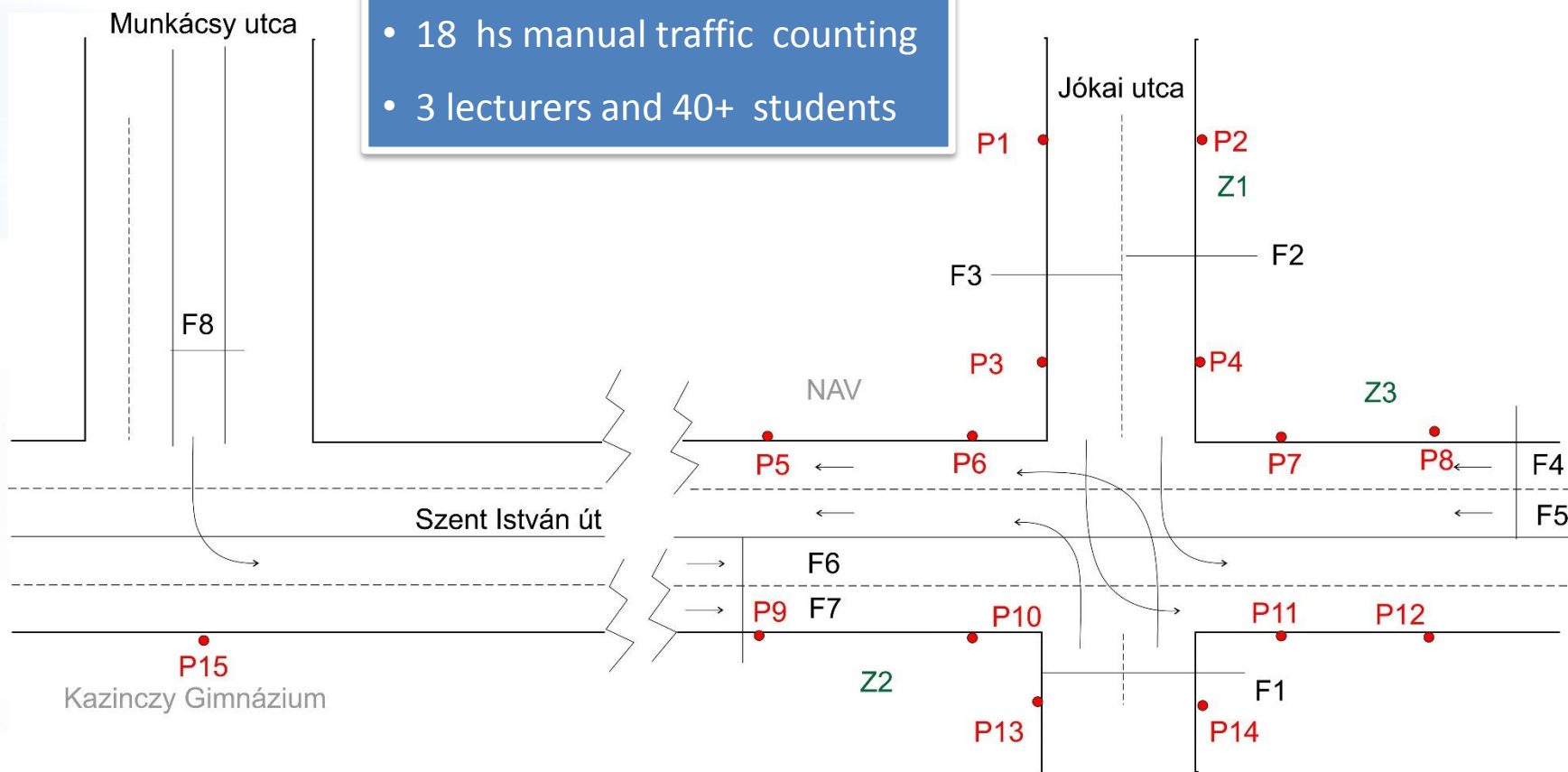


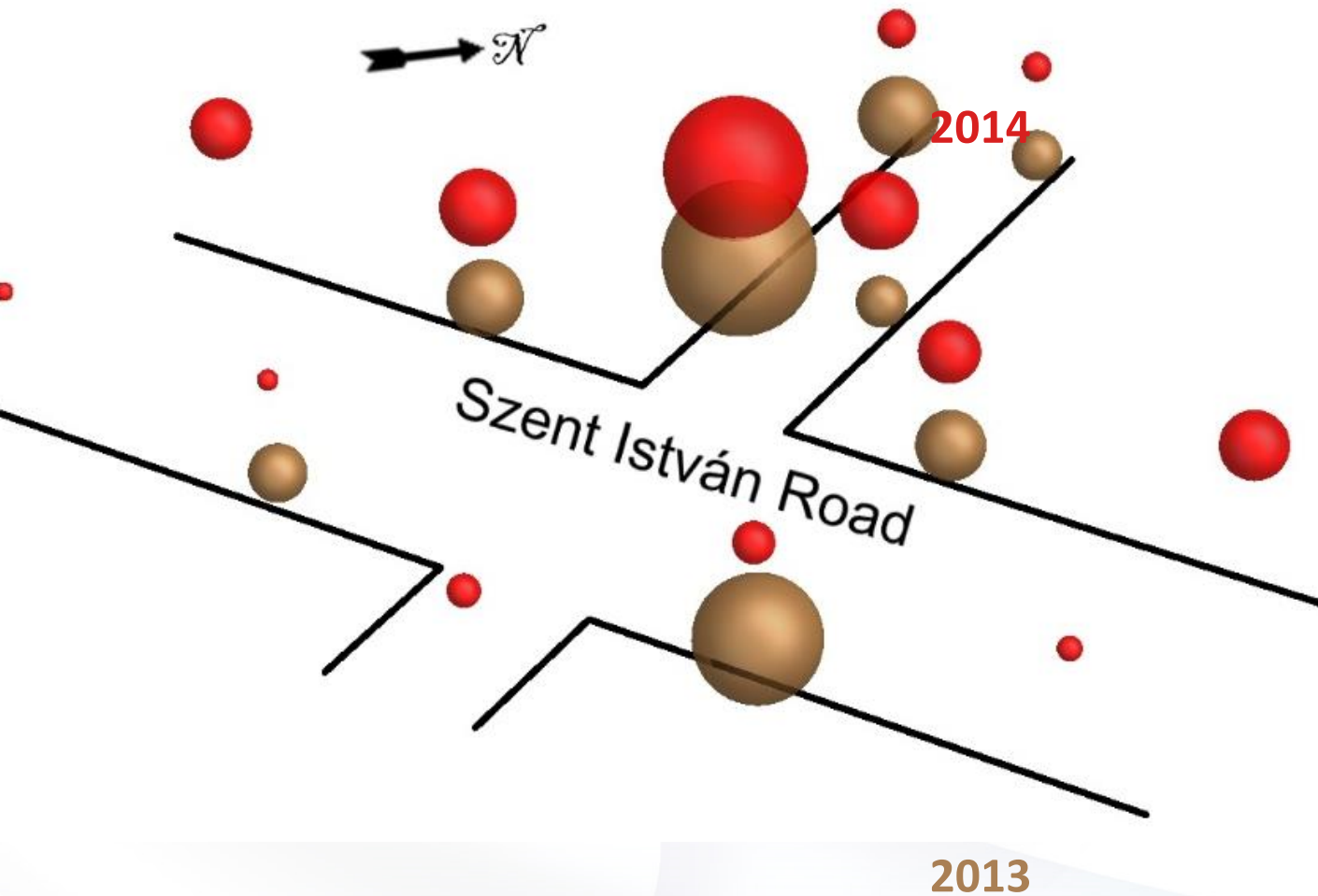
- Measurements in Győr at 2 different districts

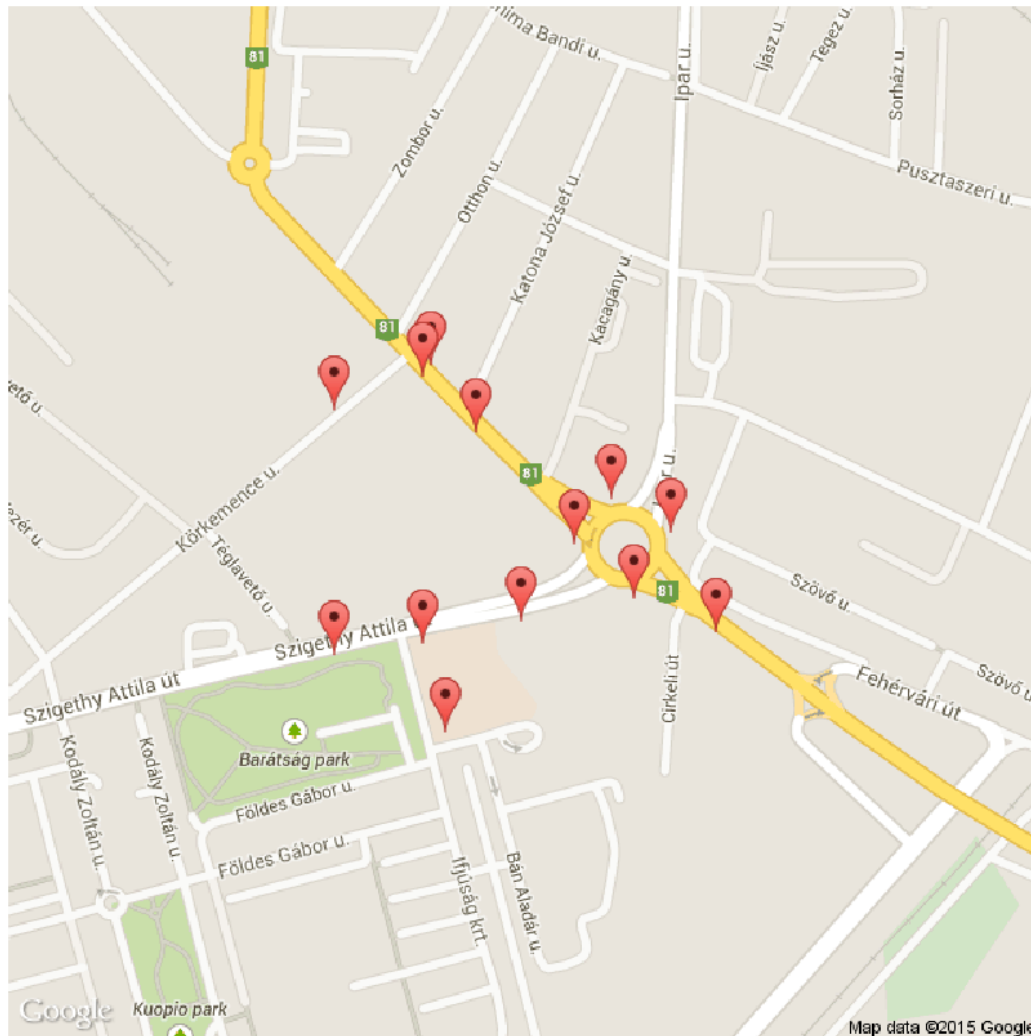




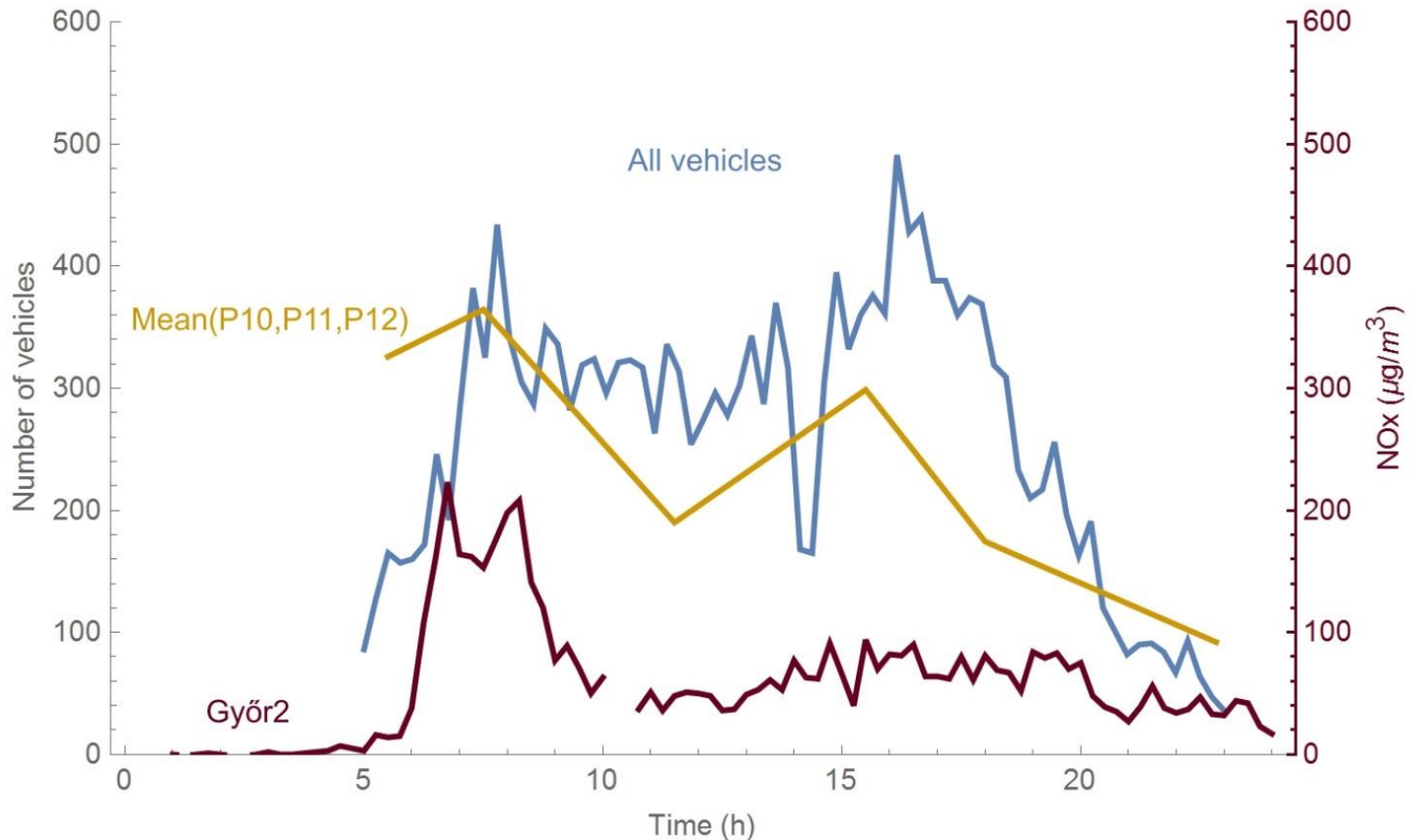
- 13 sampling sites
- 6 air samples/day
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- 2 main roads
- 1 roundabout
- 2 control points
- 13 sampling sites
- 6 air samples/day
- 18 hs manual traffic counting
- 3 lecturers and 40+ students



- Project days – no classroom lessons
- Participation as in parts of courses
 - Air pollution
 - Noise
 - Ecology
- Schedules
 - Traffic counters
 - Pumpers
 - Noise investigators
- Facebook group
- Supervisors



International students



Difficulties

- Long shift (5 to 23)
- Early morning
- Weather
- Several scenes
- Some under-motivated students

Profits

- Precise work
- Understanding of serious measurement
- Robust practice
- Problem solving
- Many volunteering
- Positive attitude



Acknowledgements

- **"Green Energy" - Higher education sector specific cooperation to improve rural economy in the field of energetics TÁMOP-4.2.2.C-11/1/KONV-2012-0017**
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HUNGARY'S RENEWAL



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