



<http://www.civil.ntua.gr/transport.html>

Invited Lecture

## Cycling: Measurements, Impacts and Network Integration

Department of Civil, Structural & Environmental Engineering,  
School of Engineering, Trinity College Dublin, Ireland

Thursday October 4<sup>th</sup>, 2018, 15:15

Railways Amphitheater, Materials Resistance Building, NTUA Campus

**The BEAT project:** Quantification of the benefits of active travel

**ABSTRACT:** Active travel such as walking and cycling is increasingly being considered as a key factor in promoting healthy living in cities. Identification, quantification and estimation of the benefits of active travel (BeAT) are critical to justify any policy changes in this vein. The BeAT project aimed at the quantification of individual and social benefits of cycling taking into account health benefits, traffic exposure, pollution, discomfort levels and other relevant factors utilising the WHO approved Burden of Disease (BOD) approach. To improve understanding of cyclist exposure, a new environmental sensing node, BEE node, developed using low cost electronics was built and used in measuring individual cyclist's exposure to air and noise pollution, vibration and other relevant factors. An optimisation tool for network-wide maximisation of cyclists' health and environmental impacts through changes in cycling infrastructure was developed to support policy makers. Dublin City in Ireland was used as a test-bed for this project.

The project showed that all aspects of cycling and active travel is not beneficial and it is necessary to consider the positives as well as the negatives while instrumenting policy changes. In addition, the project identified challenges of intelligent sensing and actual implementation of such measurements in a design tool such as an urban transport network model.



Prof. Bidisha Ghosh is an Assistant Professor in the School of Engineering at Trinity College Dublin in Ireland. She is the Chair of the Irish Transport Research Network, the national body for transportation research in Ireland. Prof. Ghosh is an expert of time-series analysis, artificial intelligence techniques, image processing and data analysis. She applies these techniques to traffic and transportation modelling and infrastructure management. She has published over 85 peer-reviewed conference and journal papers. She is a member of the editorial board of Transportation Research Part C, the TRB Statistical Committee & IEEE Smart Cities Smart Mobility Committee. She has

been an investigator in multiple national and EU projects in the field of traffic & transportation modelling, environmental modelling and infrastructure management.