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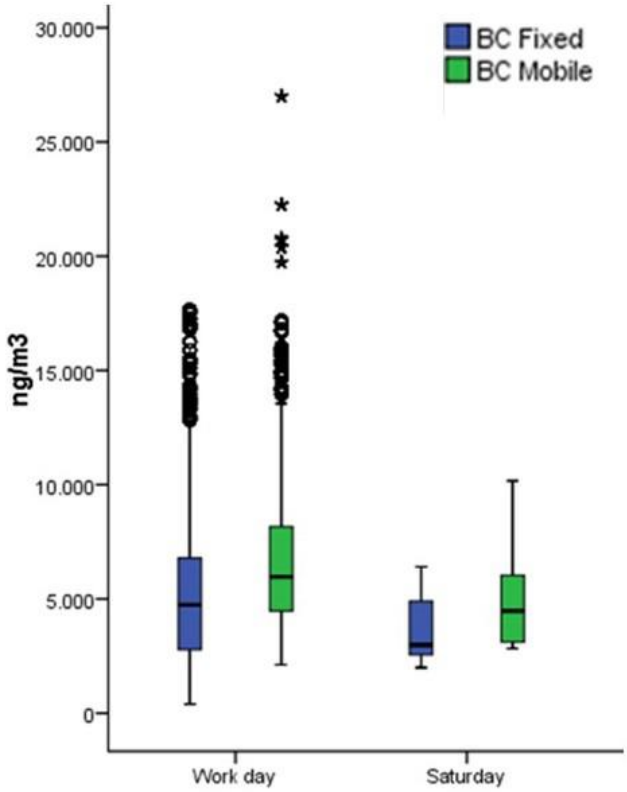
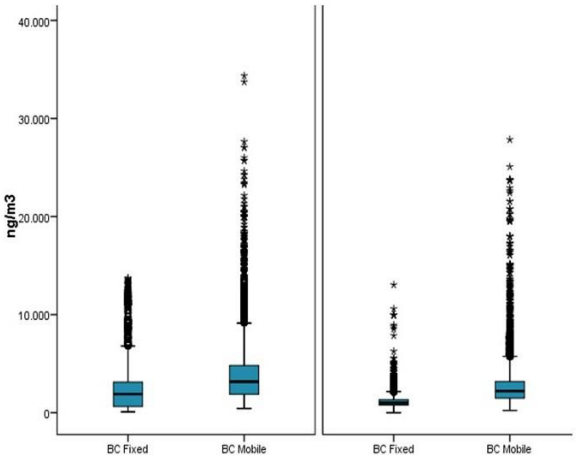
Publication title	Black carbon concentration levels along pedestrian routes in Milan
Publication type	Poster
Introduction & Background	High concentration levels of black carbon (BC), which have been linked to health problems, are typical for urban environments. In particular, BC is reported to be related to vehicular traffic emissions and is used as a tracer of primary anthropogenic emissions. In urban areas the spatial variability of BC concentration reflects changes in the strength of local sources and in atmospheric mixing. This latter can be strongly influenced by the features of the built environment, especially when the buildings flanking the streets on both sides create canyon-like environment, thus named urban canyons.
Methodology	In this work, BC concentration levels measured at high time and space resolution along pedestrian routes in Milan are reported. Two AE51 micro-aethalometers were used for field measurement of BC while walking the routes and, concurrently, at an urban background monitoring site. The field campaigns, covering both the winter and the summer period with two measurement sessions per day (morning and afternoon) during weekdays, were designed in order to investigate the spatial and temporal variability of the personal exposure concentrations to BC. Measurements have been performed along three pedestrian routes: a 17-km route in Milan city centre through six different urban zones, characterized by different traffic intensity and regulation (partially including the traffic congestion charge area); a 5-km route in the University campus area; a 20-km route still in the University campus area, but also extending towards the city centre and the outskirts of the city. Pedestrian routes were designed in order consider not only the different traffic intensity on urban roads but also the effect of the built environment on BC atmospheric dispersion.
Results & Conclusions	Seasonal results show that BC concentrations in the winter period were higher than in the summer. The highest concentrations were observed at the most traffic exposed sections of the routes; however, high concentration levels were also observed at urban canyon areas, though with reduced traffic. BC mean concentrations observed along the routes were higher than at the urban background site, suggesting that the concentrations measured at fixed monitoring stations may be a poor indicator of the real exposure in the urban environments.
Images	
Caption Figure 1:	



Workdays and Saturdays BC levels on the 17-km route (cold season data)

Caption Figure 2:



BC warm season levels on the 17-km route (left panel: morning data; right panel: afternoon data)