



## **Turbulent sensible heat flux in Łódź derived from scintillometer measurements**

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Scintillation method becomes more common in boundary layer measurements. This method has been successfully applied in measurements of the sensible heat flux (QH) in natural areas, while there are not many studies including urban ones. The aim of this study is to compare the results derived from iterative procedure (MIX) for different stability functions with free convection assumption (FREE) and eddy covariance measurements. The scintillometer allows to obtain path averaged surface flux, but the central part of this path contributes most to the ultimate flux value. In case of Łódź the location of scintillometer makes possible to estimate the surface heat flux in the city centre. As computations in this method are very vulnerable to even slight change of the effective height of scintillometer beam, the height of build canopy had to be determined as accurate as possible. The effective height in considered area was estimated about 23 m. This study indicates that MIX gives relatively higher values of the QH than FREE. Mean difference between these two approaches is up to 27 – 33 W•m<sup>-2</sup> depending on the stability functions that were chosen. Moreover QH calculated with FREE is lower than QH derived from eddy covariance by about 4 - 16 W•m<sup>-2</sup>.