

The paper is quite interesting since it contribute to improve knowledge on brown carbon quantification. The aim of the paper should be better stressed in the abstract. Furthermore from the abstract it is not clear why the authors decided to use a different laser radiation. It has to be specified.

The text could be simplified in many points. For example at line 64: aerosol samples collected on filters made of refractory material (i.e. quartz fibre filters), should be: ... made of quartz fibre filters (in fact there aren't other possibility). From line 69 to line 72 the text could be simplified since how TOT method operates is well known. At line 85 of the introduction it should be mentioned that biomass burning contribution to PM could be also estimated by other methods such as AMS (aerosol mass spectrometry) which starting from mass spectral data is suitable for identification of biomass burning source. At this purpose I suggest to include the following reference:

Daellenbach, K.R., Bozzetti, C., Křepelová, A., Canonaco, F., Wolf, R., Zotter, P., Fermo, P., Crippa, M., Slowik, J.G., Sosedova, Y., Zhang, Y., Huang, R.-J., Poulain, L., Szidat, S., Baltensperger, U., El Haddad, I., Prévôt, A.S.H. Characterization and source apportionment of organic aerosol using offline aerosol mass spectrometry (2016) *Atmospheric Measurement Techniques*, 9 (1), pp. 23-39.

Somewhere in the introduction it should be mentioned that levoglucosan is the marker for BB. At this purpose together with the reference Piazzalunga 2010, I suggest to include for example the following reference:

Vassura, I., Venturini, E., Marchetti, S., Piazzalunga, A., Bernardi, E., Fermo, P., Passarini, F. Markers and influence of open biomass burning on atmospheric particulate size and composition during a major bonfire event (2014) *Atmospheric Environment*, 82, pp. 218-225.