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Interactive comment on "Isoprenoid emission response to changing light conditions of English oak, European beech and Norway spruce" *by* Ylva van Meeningen et al.

Anonymous Referee #2

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The light responses of BVOC emissions, photosynthesis and stomatal conductance on three common European tree species in Taastrup, Denmark were studied. Light intensity was increased in four steps, whilst other chamber conditions, temperature, humidity and CO2 levels were fixed. The emission rate differed between individuals of the same species, the relative contributions of compounds to the total isoprenoid emission remained similar. Some compounds showed an increasing response with increasing light intensity, and other compounds no significant response. English oak and European beech showed high light-dependent emission fractions for isoprene and sabinene, but light-independent for other compounds. For the two provenances of Norway spruce, the compounds α-pinene, 3-carene and eucalyptol showed high light-

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dependent fractions. This study shows different responses of BVOC emissions to the change of light, which are useful for understanding BVOC emission characteristics, light dependent and light independent. It is suggested to be accepted for the publication after minor revision.

In Fig. 3: For early spruce 2, the emission rates of isoprene and total MT were extremely low at 1000 μmol m-2s-1 , please give an explanation.

It is suggested to develop relationships between BVOC emissions and PAR for these light dependant trees based on the measurements, or using current models to determine or valid relationships between BVOC emissions and PAR. Considering the valuable data, it is also suggested to publish it in more detail with this paper or somewhere else for the usage of the community.

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