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Interactive comment on "Non-destructive evaluation of moisture content in wood by using Ground Penetrating Radar" *by* Hamza Reci et al.

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The comment from referee 1, is very interesting. I am trying to answer to his comments shortly. The sampled wood is with almost uniform humidity, because the values of dielectric constants can be influenced if there is a gradient humidity too. Wood is an anisotropic media, so the dielectric properties of wood are strongly influenced form the polarization of Electric field in relation with wood grains, moreover these properties are influenced by cellulose and mannan in the longitudinal direction, but in transverse direction the dielectric properties are influenced by lignin. Lignin has lower dielectric properties than cellulose. Therefore, it is expected that transverse values are lower than longitudinal values for the same humidity, and this is more clear from the reflected wave. For the direct wave, the direction of propagation of the EM wave is almost as in the case of radial polarization so this change is lower. As a conclusion we can say

that the effect of wood species can be best studied under longitudinal direction and from the reflected wave, because the dielectric properties differentiate themselves as a function of the moisture content mos clearly in this direction. Whereas, this is not the case for the direct wave.

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