

# ***Interactive comment on “Application of geophysical tools for tree root studies in forest ecosystems in complex soils” by Ulises Rodríguez-Robles et al.***

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Rodríguez-Robles et al present the results of jointly using GPR and ERT for study soil water and root dynamics. I cannot evaluate this as an expert in these geoscientific tools, but as a scientist with a general interest in water uptake and a potential end-user in the long term. Considering this perspective, I found the manuscript provides a set of novel tools to the vexed problem of assessing root water uptake, particularly in semi-arid, rocky environments. The authors show how this is the first study using this technique shallow and rocky soils, rendering the manuscript as novel. The graphics and overall data presentation is outstanding (although axes labels could be made bigger for ease of reading). I only have a couple of minor comments, in case they help to

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improve even more this study: 2.2 – PST 55 (notice the typo) are notorious for lack of temperature compensation. How did you account for that? Table 5 – please pay attention to wording of legend. Please clarify x-axis and legend in fig. 2b. Note also that roots are thicker at the top... does the results of thicker roots in pine at 30cm indicates that 1 single big root at the top divides into more thick roots afterwards? How do you explain having more thick roots at deeper surfaces for pines? That's particularly surprising because , as your diagram in Fig. 3 shows, pines have a shallow root system Fig. 5 – there are some fairly low soil water potentials. Why?

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