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Interactive comment on "Drought reduces tree growing season length but increases nitrogen resorption efficiency in a Mediterranean ecosystem" *by* Raquel Lobo-do-Vale et al.

Anonymous Referee #2

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This study aimed at untangling the effects of drought on timing, duration and amount of growth, budburst, and nitrogen resorption efficiency. For this, the authors used 2 subsequent years, one of which was a mild drought, the other a strong drought. The authors found significant reductions in timing and duration of phenological parameters like budburst and growth, and found an increased nitrogen resorption in drought stressed trees, mitigating the negative effects of drought on N uptake from the soil.

The authors study some important aspects of effects of a changing climate: the phenology of trees. In the discussion they are however a bit chaotic, and strong explanations on what has been caused by drought and what could be caused by other factors are

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partly there but not very elaborate.

I think I understand that only dry/ambient trees were used, and not the wet trees. This has to be more clearly explained though, even if referred to another paper, it would be nice to have a clear explanation in this paper on the exact study sample. Why were the wet trees not used? That could have been a nice interaction: drought years and trees growing with more or less water.

I advice to revise the discussion. It is a bit chaotically structured. Different measured variables come back every time with another focus, but then there is also overlap (trunk growth first occurs in terms of timing and duration (p16, line 25 a.f), then later it comes back again in growth rate but also again duration (p18 line 5 etc)).

The authors mention the short time frame of their study in the conclusion, but it would be nice to already discuss some of this in the discussion. Because, what could be the effect of time lags of drought on growth? Are there any legacy effect?

Some minor comments

Could you indicate significance in figure 2?

I feel that figure 4 is unnecessary next to figure 3. If significance would be indicated in figure 3, all those relations would already be shown there.

P14 line 16, move to discussion

Discussion P16 line 1-7 What was the DDS at budburst in this study? This does not have to be speculated on, the data is there to calculate, right?

P17 line 1-7 Is water the only factor that can cause cessation of growth? In the mild year, I think the cessation was not caused by a low water potential, but by other factors that determine the end of a growing season.

P20 line 9 In my view it has been speculated upon but not shown.

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