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## ***Interactive comment on “Process based model sheds light on climate signal of mediterranean tree rings” by R. Touchan et al.***

**R. Touchan et al.**

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Dear Professor Ffolliott,

We are grateful you found our manuscript “new, unique, and potentially powerful model (tool) for management of natural resources.” We believe your comments and suggestions will improve and enhance the article. Concerning your questions:

1. However, is the model equally applicable to tree-ring chronologies of angiosperms (hardwood trees)?

Yes, this model is applicable to tree-ring chronologies of angiosperms (hardwood trees). Developers of the model (E. Vaganov, A. Shashkin and H. Fritts) have used it in hardwood successfully (unpublished results). They estimated integral tree-ring

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rates correctly. But in this case, it is necessary to take into account the specificity of other anatomic structure of tree rings.

2. Estimate of the water content of soil to be obtained from daily temperature and precipitation measurements following the procedure of Thornthwaite and Mather is a key element of model. In the absence of knowledge of daily temperature and precipitation, can such an estimate be obtained by an alternative methods?

Fritts et al. (1991) had similar outcomes when compared the results of their model for soil moisture with ones of classical hydrological model. You are right the estimated water content of soil is a key element of the VS-model. This element should be enhanced whenever possible and we are trying to improve the model block. We appreciate it if you have any other recommendation to modify the VS-model and make it a more powerful tool for the management of natural resources.

Regarding your editorial suggestions, we made the required changes.

Best regards,

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Interactive comment on Biogeosciences Discuss., 8, 11089, 2011.

**BGD**

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