

## ***Interactive comment on “Evaluation of vegetation fire smoke plume dynamics and aerosol load using UV scanning lidar and fire-atmosphere modelling during the Mediterranean Letia 2010 experiment” by V. Leroy-Cancellieri et al.***

**Anonymous Referee #2**

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Review of manuscript: “Evaluation of vegetation fire smoke plume dynamics and aerosol load using UV scanning lidar and fire-atmosphere modelling during the Mediterranean Letia 2010 experiment”

Authors “V. Leroy-Cancellieri, P. Augustin, J. B. Filippi, C. Mari, M. Fourmentin, F. Bosseur, F. Morandini, and H. Delbarre “

Summary: This manuscript describes LiDAR-based measurements of a smoke plume from a small, heavily instrumented, prescribed burn. These measurements are com-

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pared with plume dynamics simulations made with a physics-based modeling framework which couples a large eddy simulation atmospheric model with a fire propagation model, with the intent of validating the modeling framework. The comparison found significant agreement between the simulated and observed results with respect to the plume horizontal movement and some underestimation of the vertical location of the plume barycenter.

This is a very interesting and valuable paper. Datasets such as the one presented in this paper are extremely rare and of great value to several different disciplines. The paper is well written, thorough, and the work presented is a significant achievement. The methodology is well described and literature cited is appropriate.

In my view, this paper is excellent work. The process used to capture the plume and the modeling of the plume dynamics is very well described. This work will be of immediate use to a many scientists in the atmospheric and fire science fields.

As I did not find any issues of importance, I recommend that this manuscript be accepted for publication.

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