

Interactive  
Comment

***Interactive comment on “An overview of the lightning and atmospheric electricity observations collected in Southern France during the HYdrological cycle in Mediterranean EXperiment (HyMeX), Special Observation Period 1” by E. Defer et al.***

**E. Defer et al.**

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Interactive comment on “An overview of the lightning and atmospheric electricity observations collected in Southern France during the HYdrological cycle in Mediterranean EXperiment (HyMeX), Special Observation Period 1” by E. Defer et al.

Anonymous Referee #2 Received and published: 4 November 2014

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We would like to thank the Reviewer for his/her review. All comments have been addressed as detailed in the following document and in the revised version of the paper. Corrections suggested by the Reviewer are indicated in red in the new version of the paper.

This manuscript describes the suite of instrumentation used and provides examples of some of the lightning and atmospheric electricity measurements and results obtained during the PEACH project of HyMeX SOP1. The results presented in this manuscript represent an important contribution to improving our understanding of storm and lightning activity in the Northwestern Mediterranean Sea and surrounding coastal regions. The manuscript is within the scope of AMT. I recommend that the paper be accepted with minor revisions.

Specific comments: I note that the specific issues I was going to raise have already been covered and addressed by the authors in their interactive replies.

Technical corrections: Abstract P8015 L14: are aimed at characterizing Corrected as suggested.

2 The HyMeX program P8019 L26: 10-year program Corrected as suggested.

P8020 L8: These measurement platforms Corrected as suggested.

3 The PEACH experiment P8020 L26: Based on 3 years of Corrected as suggested.

P8021 L1: remove "as deduced from LIS". redundant. Removed as suggested.

P8021 L14: forecasts Corrected as suggested.

P8021 L20: remove "a" Removed as suggested.

3.1 Scientific objectives and observational/modelling strategy P8022 L16: aims to document Changed as suggested.

P8022 L23: of deploying relevant instrumentation Corrected as suggested.

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P8023 L14: has previously experienced heavy precipitation Modified as suggested.

P8024 L8: descriptions of lightning activity Corrected as suggested.

P8024 L15: relative to Corrected as suggested.

3.2.1 HyLMA P8025 L1: data were Corrected as suggested.

P8025 L2: for detailed post-processing. Corrected as suggested.

3.2.3 MBA/MPA P8026 L19: signal from Corrected as suggested.

3.2.4 EFM P8027 L15: used at three Corrected as suggested.

P8027 L22: data from each sensor were Corrected as suggested.

3.2.5 VFRS P8028 L11: data could record distances up to We rephrase the statement as follows “At adequate visibility, combined video and electric field data could record flashes with sufficient quality up to 50-km range”.

P8028 L13: A detailed description of the Corrected as suggested.

VFRS p8028 L19: in continuous Changed as suggested.

3.2.6 Locations and status of the reserach instruments P8029 L2: consisted of Changed as suggested.

P8029 L6: network, a few tens Changed as suggested.

P8029 L7: hills, a few hundred meters away from the Grande Changed as suggested.

P8029 L15-16: initially operational with ... 2012, and expanded to 11 stations Changed as suggested.

3.3.1 ATDnet P8030 L6 : paths of VLF sferics Changed as suggested.

3.3.2 EUCLID P8031 L21: has been steadily improving Removed as the paragraph describing EUCLID has been rewritten.

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3.3.3 LINET P8031 L27: Each sensor includes Changed as suggested.

P8032 L2: by a lightning discharge. Added as suggested.

P8032 L7: LINET also detects Changed as suggested.

3.3.4 ZEUS P8032 L28: capable of detecting Changed as suggested.

3.5.2 The WRF model P8034 L9: the use of available Corrected as suggested.

P8034 L10: to improve the monitoring Changed as suggested.

P8034 L12: the authors applied an assimilation Changed as suggested.

P8034 L14: presence of convection in the MM5 mesoscale model Changed as suggested.

Examples of unusual lightning flashes P8039 L3: splits into two paths Corrected as suggested.

P8039 L14: capability of operational systems Corrected as suggested.

P8040 L1: Figure 7 presents an example Corrected as suggested.

P8040 L15: occurred in Corrected as suggested.

P8040 L16: relative to HyLMA Corrected as suggested.

P8040 L26: Such discrepancies are Corrected as suggested.

Concurrent VHF and acoustics measurements P8041 L19: 105s Corrected as suggested.

P8041 L24: shows a less Corrected as suggested.

4.2.2 P8042 L5: SOP1 period. Although Changed as suggested.

P8042 L6-7: not discussed here, it is worth mentioning Changed as suggested.

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P8042 L19: 2012) associated with scattered Added as suggested.

P8043 L24: The first Corrected as suggested.

P8043 L28: The VFRS operated from Corrected as suggested.

P8043 L29: and then moved to Mont Ventoux Corrected as suggested.

P8044 L6: shows an extensive area of Corrected as suggested.

P8044 L17: Analyses combining Changed with “Analyses combining HyLMA, OLLSs, and operational radar records are underway”.

P8044 L18: records are Corrected (see previous correction).

P8044 L19: precursors related to this tornado. Corrected.

5 Prospects P8045 L26: density to populate the Corrected.

P8046 L12: LMA will be established in may 2014 Corrected.

P8046 L16: PEACH project have already helped Corrected.

References P8051 L19: MacGorman et al 1981 - not cited in text This reference is now included in the manuscript in the last paragraph of Section 3.2.3/

P8052 L23: Saunders 2008 - not cited in text The reference is now removed from the reference list.

Please also note the supplement to this comment:

<http://www.atmos-meas-tech-discuss.net/7/C3589/2014/amtd-7-C3589-2014-supplement.pdf>

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Interactive comment on Atmos. Meas. Tech. Discuss., 7, 8013, 2014.

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