

## **Reviewing comments**

for manuscript HGSS-2024-9 by Kristian Schlegel

“Lightning and thunder explanations in encyclopedias - from ancient Greece to WIKIPEDIA”

### **General impression:**

This reviewer comes from the non-atmospheric-electricity part of the IAMAS/IUGG community and is representative for the manuscript’s impression on an informed non-specialist. The paper is regarded as a most interesting collection of state-of-the-art references that appeared over the centuries in encyclopedias regarding the topic “Lightning and thunder”. This specialty within the much broader field of atmospheric sciences regularly attracted the attention of the general public. The selection of the material presented in the four main sections appears to be broad, but necessarily subjective.

The main shortcoming of the manuscript about a broad collection of secondary sources and some fine reproductions of old figures is seen in the omission of a convincing motivation for the collection assembled in section 2 to 5 as well as insufficient conclusions in the final section 6.

Ideally, the revised manuscript should mention the author’s personal motivation for undertaking his collective exercise (*e.g.*, long personal interest in the topic “lightning and thunder”; a compact specialty of science combined with a long history of publications; encyclopedias as secondary sources ease to selection, etc.). Likewise “lessons learnt” should be dealt with in some detail in the final section and possibly also touch upon the human enterprise “scientific study” (every generation mostly pretends to have reached sufficient understanding, even if often overwhelmed by the complexity of [atmospheric] nature).

I would like to leave it to the topical editor to advise the author with guiding hints to be followed during the production of a revised version of the manuscript.

### **Specific observations from reading the manuscript:**

#### *Section 1: Introduction (lines 17–44):*

Here mainly technical details about the considered encyclopedias are collected. Missing are the personal motivation for the collection and the expression of any hope about the general usefulness of the collection. Can the combination of the topic “Lightning & thunder” with enc.s as solitary source of information be expected to provide general insights about the acquisition of knowledge? Are similar attempts for other topics known to exist? If yes, examples should be mentioned.

At least an additional half to full page would assist the reader a lot.

*Section 5: Enlightenment and later (lines 199–366):*

It appears to be appropriate to split this section into two:

5. *(Early) Enlightenment (1700 – 1900)* and

6. *Modern times (after 1900?)*

with thresholds adjusted as appears to be most fitting.

At the end of (new) section 6 reference to a 12-year old research article (Schmidt et al. 2012) could be made as it attempted to closely link lightning in a (isolated) thunderstorm to its life-cycle and the complexity to atmospheric dynamics. Using Fig. 4 (of Schmidt) as a local complement to the global view given in the current Fig. 4 would provide the reader with a flavor of the breath of scales that are dealt with in current “lightning research”. The case study occurred over the Black-Forest region and was published in another journal of the Copernicus family of journals.

*(Current) Section 6: → 7. Concluding remarks (lines 369–376):*

As stated above (for *Introduction*) some more specific conclusion should be assembled. They may comprise:

- How can the route of progress be classified? Purely random? Parallel to the progress in classical physics? How important is a sufficiently synoptic view around the dynamic generation of thunderstorms?
- How useful proved to be the restriction to encyclopedias as sole sources (except the recent example of a research article)?
- Are the general comments about the human endeavour of collecting the entire body of current knowledge within printed multi-volume encyclopedias (from ~1700) to the multi-nation, multi-authors exercise of Wikiedia (since 2003)? Just useful or also containing some human hubris?
- A mention of the scientific grouping ICAE (International Commission on Atmospheric Electricity; <https://www.iamas.org/icae/> ) within IAMAS as a current home for the topic the evolution of which is presented.in the article.

**Reference:**

Schmidt, K. et al., 2012: Detailed flow, hydrometeor and lightning characteristics of an isolated thunderstorm during COPS. *Atmos. Chem. Phys.*, **12**, 6679–6698; online: [www.atmos-chem-phys.net/12/6679/2012/](http://www.atmos-chem-phys.net/12/6679/2012/) , doi:10.5194/acp-12-6679-2012