

## Your Abstract Submission Has Been Received

Print This Page

You have submitted the following abstract to 34th Conference on Hurricanes and Tropical Meteorology. Receipt of this notice does not guarantee that your submission was complete or free of errors.

---

### Sub-seasonal predictability of climate driving meningitis outbreak over the African meningitis belt

**Cheikh Dione**, Centre Africain des Applications de la Météorologie pour le Développement, Niamey, Niger; and M. D. DIOUF, N. Ward, C. Taylor, D. Parker, A. H. Fink, and J. Talib

#### Abstract Text:

The two well-defined northern Africa seasons (wet and dry) are characterised by the occurrence of devastating tropical diseases such as meningitis, Lassa fever, Rift Valley fever, and malaria. These tropical diseases are associated with specific atmospheric conditions. Meningococcal Meningitis outbreaks are climate sensitive and one of the most endemic diseases observed over the African Meningitis Belt (AMB) with a prevalence period up to 7 months (December-June). Previous studies based on the link between atmospheric conditions and the occurrence of meningitis outbreaks have shown that this disease develops under dry and dusty atmospheric conditions which are difficult to represent in numerical weather and climate models, and their predictability at a sub-seasonal timescale is not well documented. The objective of this study is to further document the predictability of the sub-seasonal drivers of the climate metrics linked to meningitis outbreaks over the African meningitis belt in order to reduce their impacts over this region. Based on ERA5 reanalysis from ECMWF, meningitis cases reported by the World Health Organisation (WHO), and in-situ and remote sensing measurements of dust, the influence of midlatitude trough regimes on meningitis episodes is demonstrated, and a potential avenue of sub-seasonal timescale predictability is proposed.

**Abstract ID:**

386546

**Abstract Password:**

**Program Selection:**

34th Conference on Hurricanes and Tropical Meteorology

**Submitter's E-mail Address:**

[cheikh.dione@acmad.org](mailto:cheikh.dione@acmad.org)

**Preferred Presentation Format:**

Oral

**Enter in Student Competition**

N

First Presenting Author

***Presenting Author***

Cheikh Dione

Centre Africain des Applications de la Météorologie pour le Développement

55, avenue des ministères, Niamey, Niger

Niamey, Niger

**Email:** [cheikh.dione@acmad.org](mailto:cheikh.dione@acmad.org)

**Alternate Email:** [dione0109@yahoo.fr](mailto:dione0109@yahoo.fr) -- Will not be published

**Student?** No

Second author

Mame Diarra DIOUF

University Cheikh Anta Diop

Laboratoire de Physique de l'Atmosphère et de l'Océan Siméon

Fongang

Corniche Ouest

Dakar, Senegal

**Email:** [diarriatoulah4@gmail.com](mailto:diarriatoulah4@gmail.com)

**Alternate Email:** [diarriatoulah4@gmail.com](mailto:diarriatoulah4@gmail.com) -- Will not be published

**Student?** Yes

Third author

Neil Ward

University of Leeds

School of Earth and Environment

Priestley Building

Leeds, United Kingdom

**Email:** [wardn626@gmail.com](mailto:wardn626@gmail.com)

**Alternate Email:** [wardn626@gmail.com](mailto:wardn626@gmail.com) -- Will not be published

**Student?** No

Fourth author

Christopher Taylor

UK Centre of Ecology and Hydrology

Hydro-Climate Risks

MacLean Bldg

Benson Lane

Wallingford, United Kingdom

**Email:** [cmt@ceh.ac.uk](mailto:cmt@ceh.ac.uk)

**Alternate Email:** [cmt@ceh.ac.uk](mailto:cmt@ceh.ac.uk) -- Will not be published

**Student?** No

Fifth author

Douglas Parker

University of Leeds

Leeds, United Kingdom

**Email:** [DJ.Parker@leeds.ac.uk](mailto:DJ.Parker@leeds.ac.uk)

**Alternate Email:** [DJ.Parker@leeds.ac.uk](mailto:DJ.Parker@leeds.ac.uk) -- Will not be published

**Student?** No

Sixth author

Andreas H. Fink

Karlsruhe Institute of Technology

Institute of Meteorology and Climate Research

Wolfgang-Gaede-Str. 1

Karlsruhe, Germany

**Email:** [andreas.fink@kit.edu](mailto:andreas.fink@kit.edu)

**Alternate Email:** [andreas.fink@kit.edu](mailto:andreas.fink@kit.edu) -- Will not be published

**Student?** No

Seventh author

Joshua Talib  
UK Centre of Ecology and Hydrology  
Hydro-Climate Risks  
MacLean Bldg  
Benson Lane  
Wallingford, United Kingdom

**Email:** [jostal@ceh.ac.uk](mailto:jostal@ceh.ac.uk)

**Alternate Email:** [jostal@ceh.ac.uk](mailto:jostal@ceh.ac.uk) -- Will not be published

**Student?** No

---

**If necessary, you can make changes to your abstract submission**

To access your submission in the future, use the direct link to your abstract submission from one of the automatic confirmation emails that were sent to you during the submission.

*Or* point your browser to </ams/reminder.cgi> to have that URL mailed to you again. Your username/password are 386546/.

Any changes that you make will be reflected instantly in what is seen by the reviewers. You DO NOT need to go through all of the submission steps in order to change one thing. If you want to change the title, for example, just click "Title" in the abstract control panel and submit the new title.

When you have completed your submission, you may close this browser window.

[Tell us what you think of the abstract submission process](#)

[Home Page](#)