

Characterizing the December 2013 extreme rainfall event over the Eastern Caribbean

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Introduction

On December 24, 2013, an unprecedented amount of rainfall within 24 hrs affected the Eastern Caribbean. This event caught local authorities in a state of unpreparedness to respond in a timely manner. The islands of St. Lucia, St. Vincent & the Grenadines and Dominica suffered heavy damage, with the accompanying loss of 18 lives.

Systems Evolution

22 December:

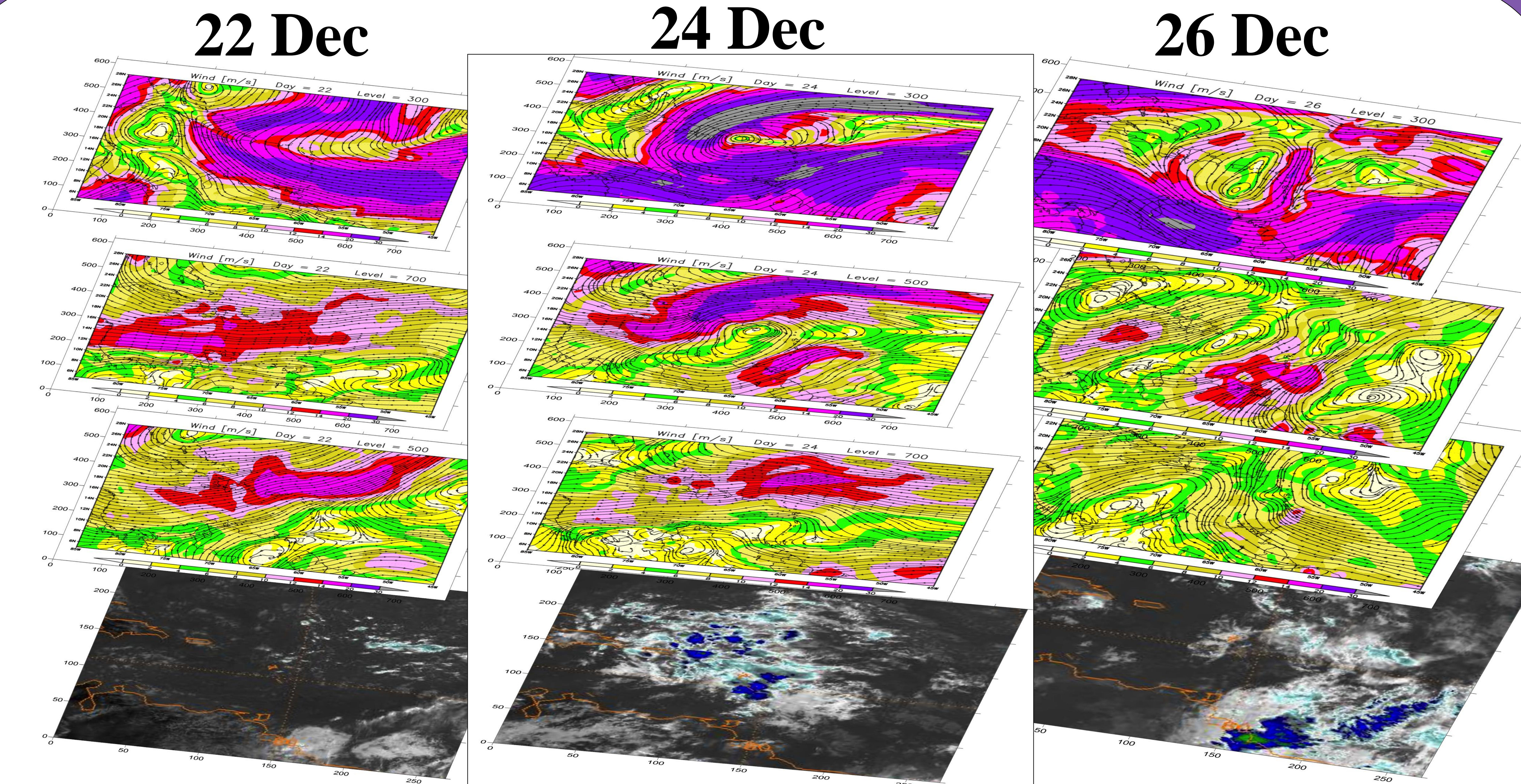
- ✧ LLT oriented ENE/WSW to east of the Lesser Antilles.
- ✧ TUTT drifts southwards over the northern Lesser Antilles.

24 December:

- ✧ LLT anchored over the Lesser Antilles in a N/S orientation.
- ✧ TUTT intensifies over the Lesser Antilles.

26 December:

- ✧ LLT and TUTT drift westward away from the Lesser Antilles



Aftermath



Conclusions

- ✧ Event was not due solely to presence of LLT, but rather to a set of coincident forces, e.g.: *LLT's alignment with the TUTT; low level moisture & wind speed convergence; and mid- to upper level speed divergence.*
- ✧ Unpreparedness partly due to overreliance on history (event largely 'unknown' outside wet season) rather than *evolving atmospheric dynamics* – accurately represented by the NCEP GFS Model.

References

nomads.ncdc.noaa.gov/data.php
www.cdema.org/
www.theweathernetwork.com