



Qoosaku Moteki, Ph. D.

Research Scientist
Research Institute for Global Change (RIGC)
Tropical Climate Variability Research Program
Japan Agency for Marine-Earth Science and Technology
(JAMSTEC)

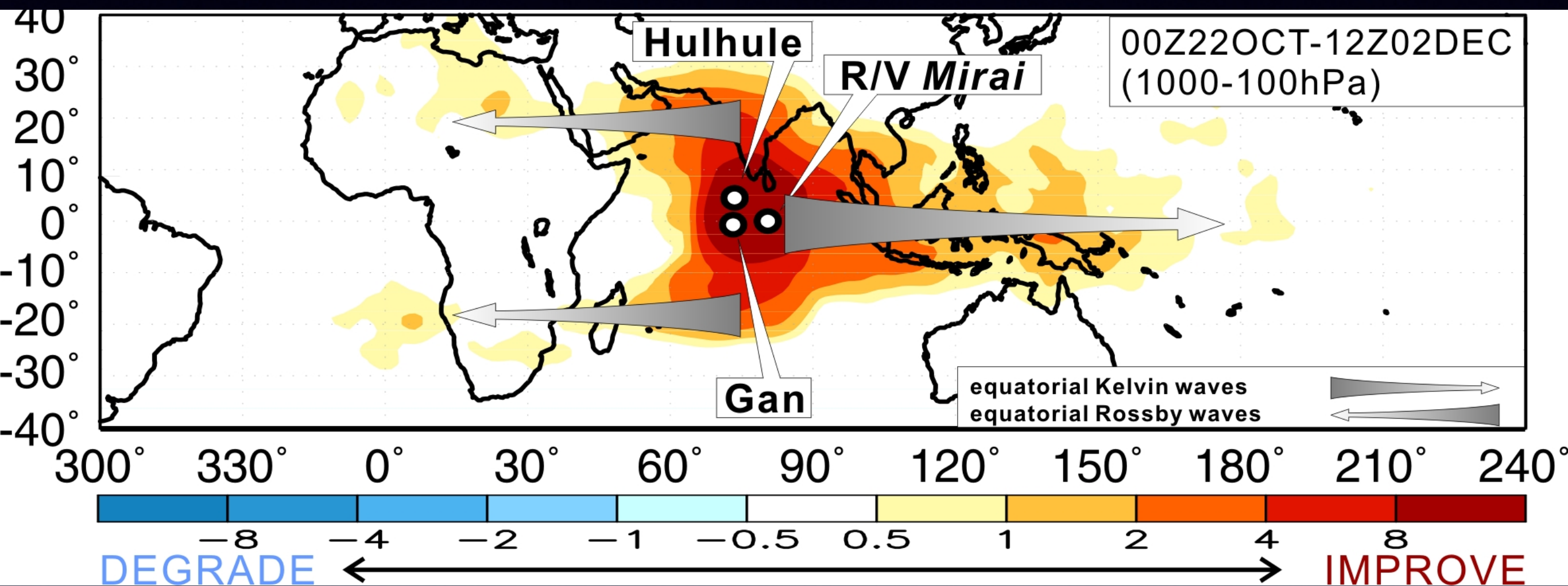
HEADQUARTERS
2-15 Natsushima-cho
Yokosuka 237-0061 Japan
PHONE +81-46-867-9284(direct)
FAX +81-46-867-9255
E-mail : moteki@jamstec.go.jp
URL : <http://www.jamstec.go.jp/>

Objective evaluation of the **value** of CINDY/DYNAMO

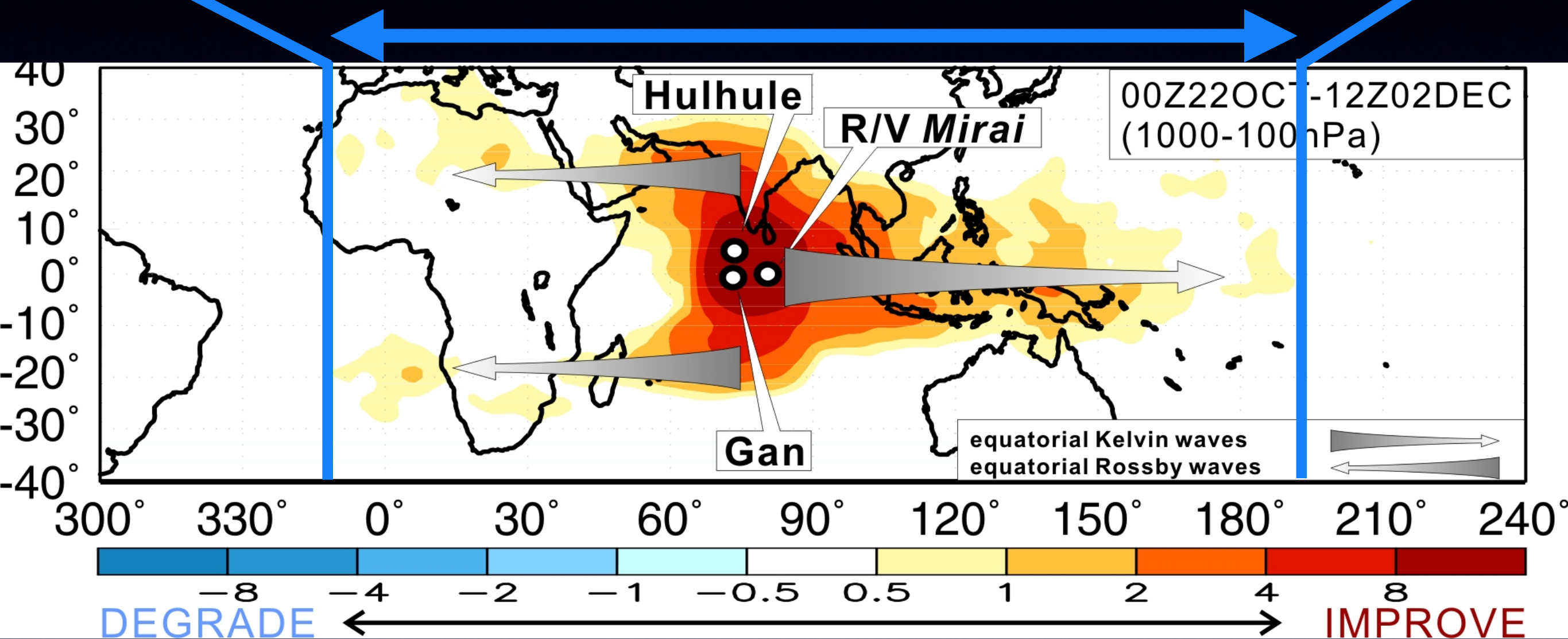
“Observing System Experiment”
evaluating the assimilation impact

Improvement of
the reanalysis **quality**
by CINDY/DYNAMO

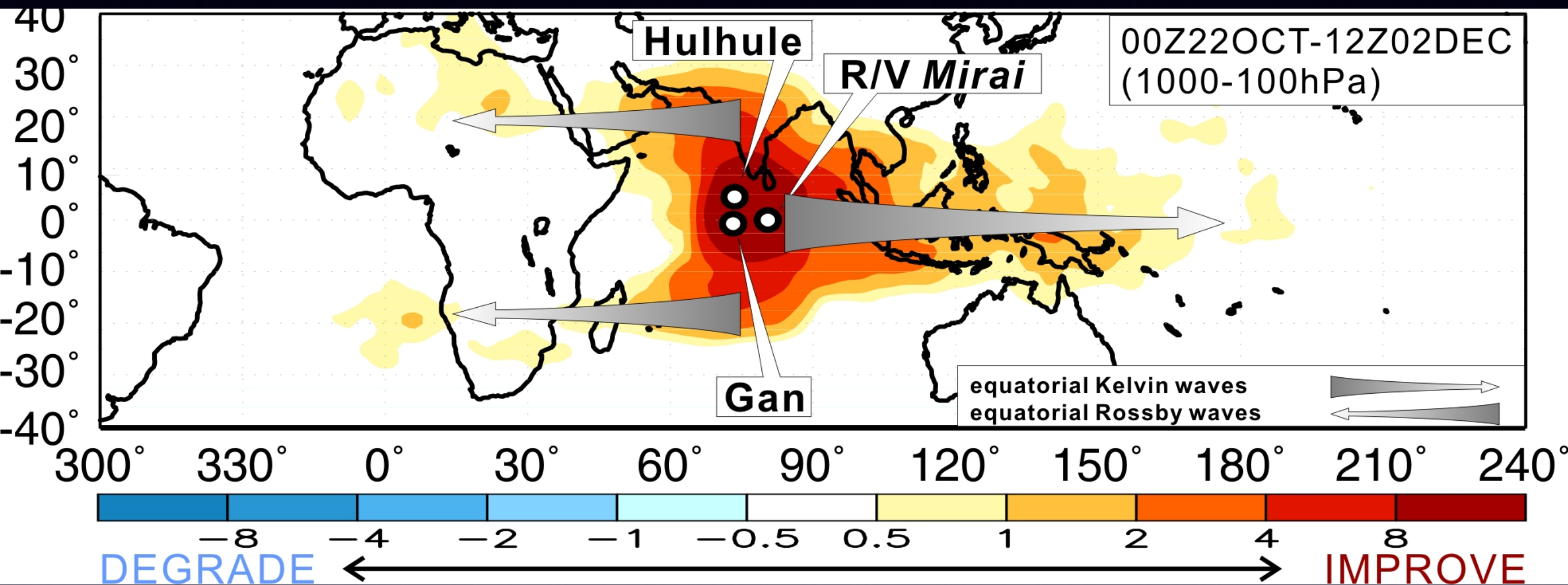
Improvement of the reanalysis quality by **MISMO2006**



More than 20,000 km wide

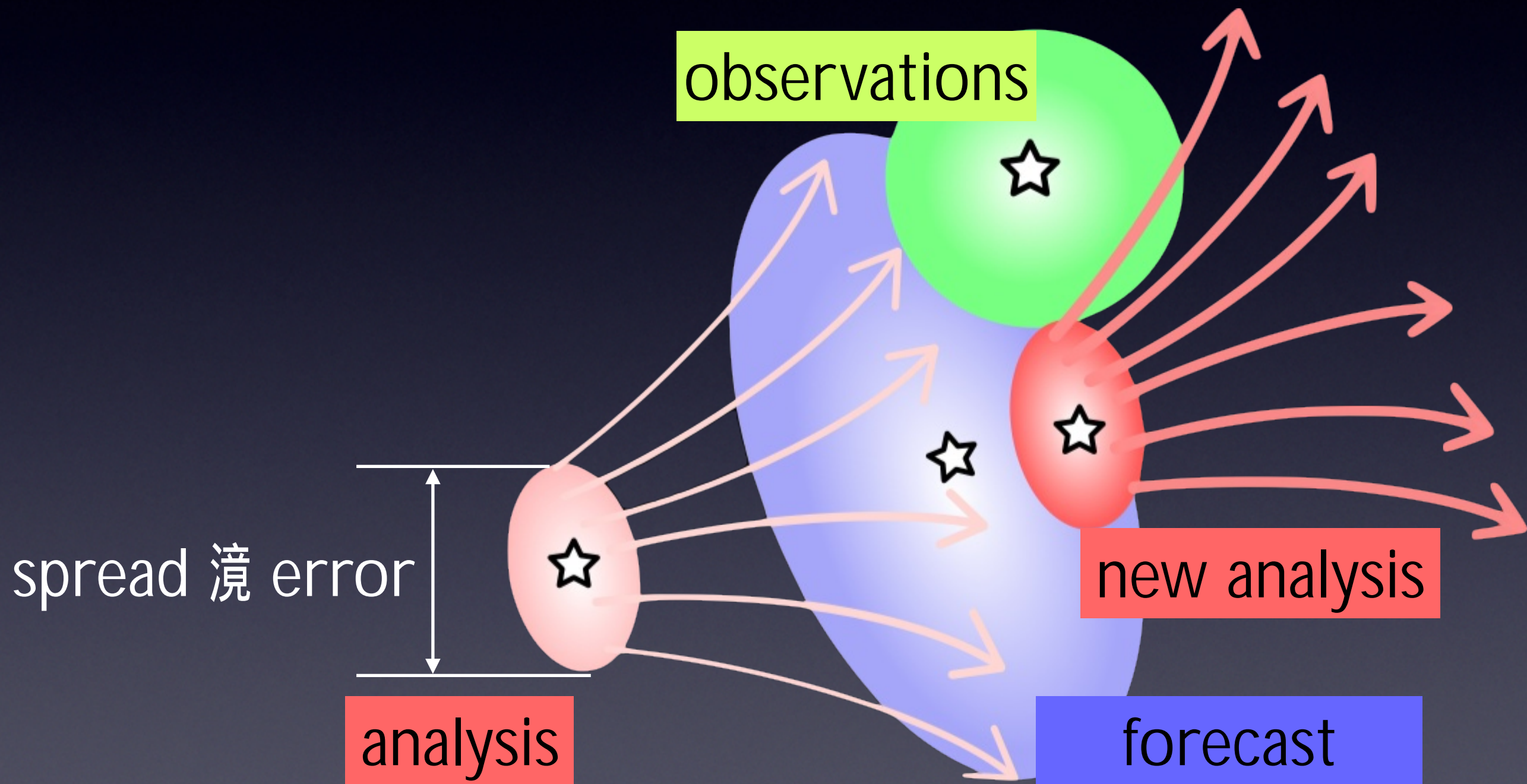


Matsuno-Gill pattern





ALERA

reanalysis dataset with 4D analysis error



ALERA2

forecast model	AFES by Enomoto	
assimilation system	LETKF by Miyoshi	
resolution	T119L48	
ensemble member	63	
observation data	UCAR GTS archive	
	NOAA daily SST	

Contributions

BEFORE the campaign

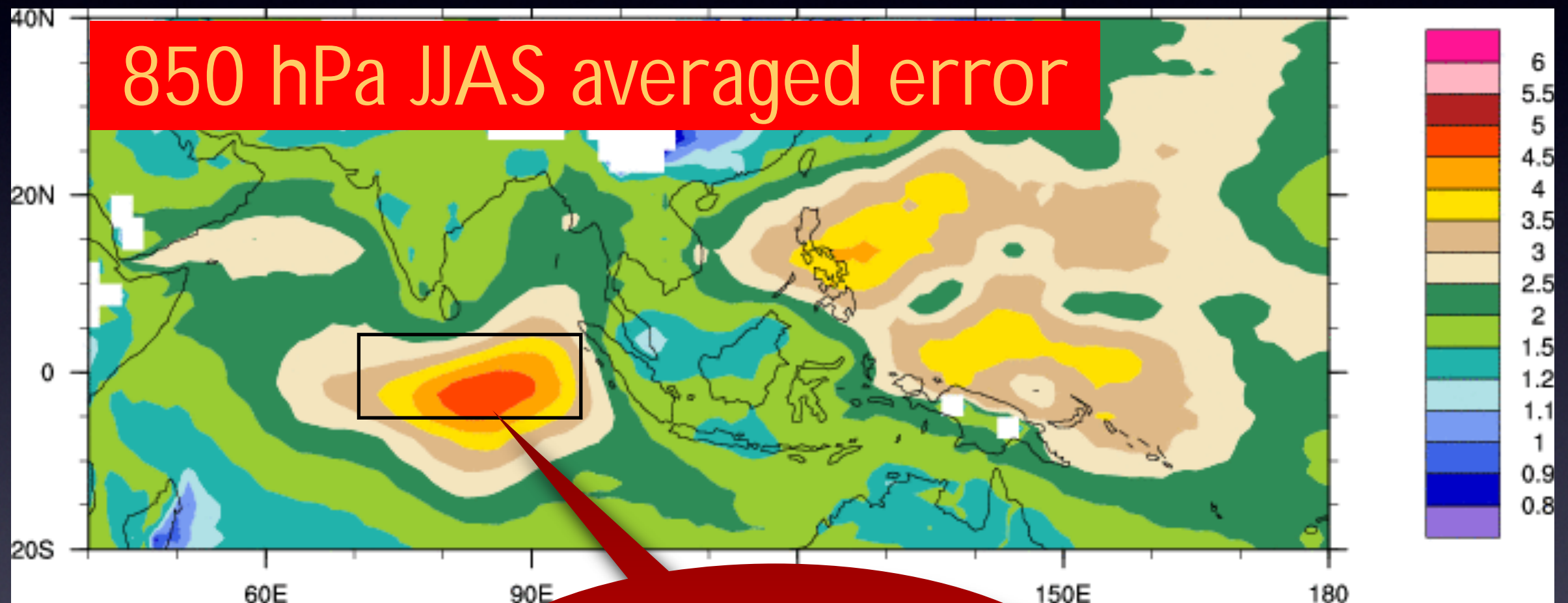
DURING the campaign

AFTER the campaign

BEFORE

feature of error distribution
over the Indian Ocean

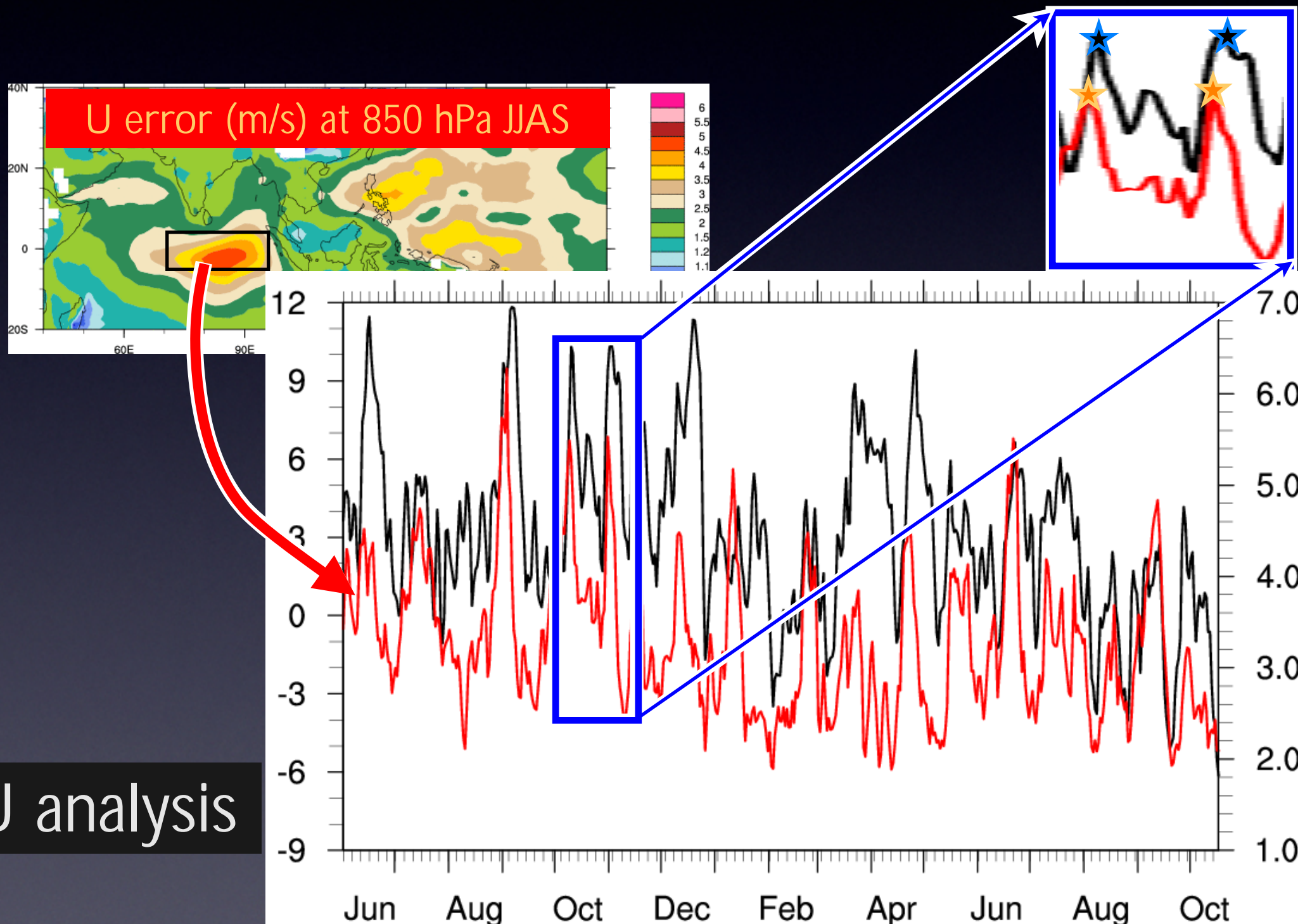
Nonuniform distribution of U error



HUGE error!!
> 4 m/s



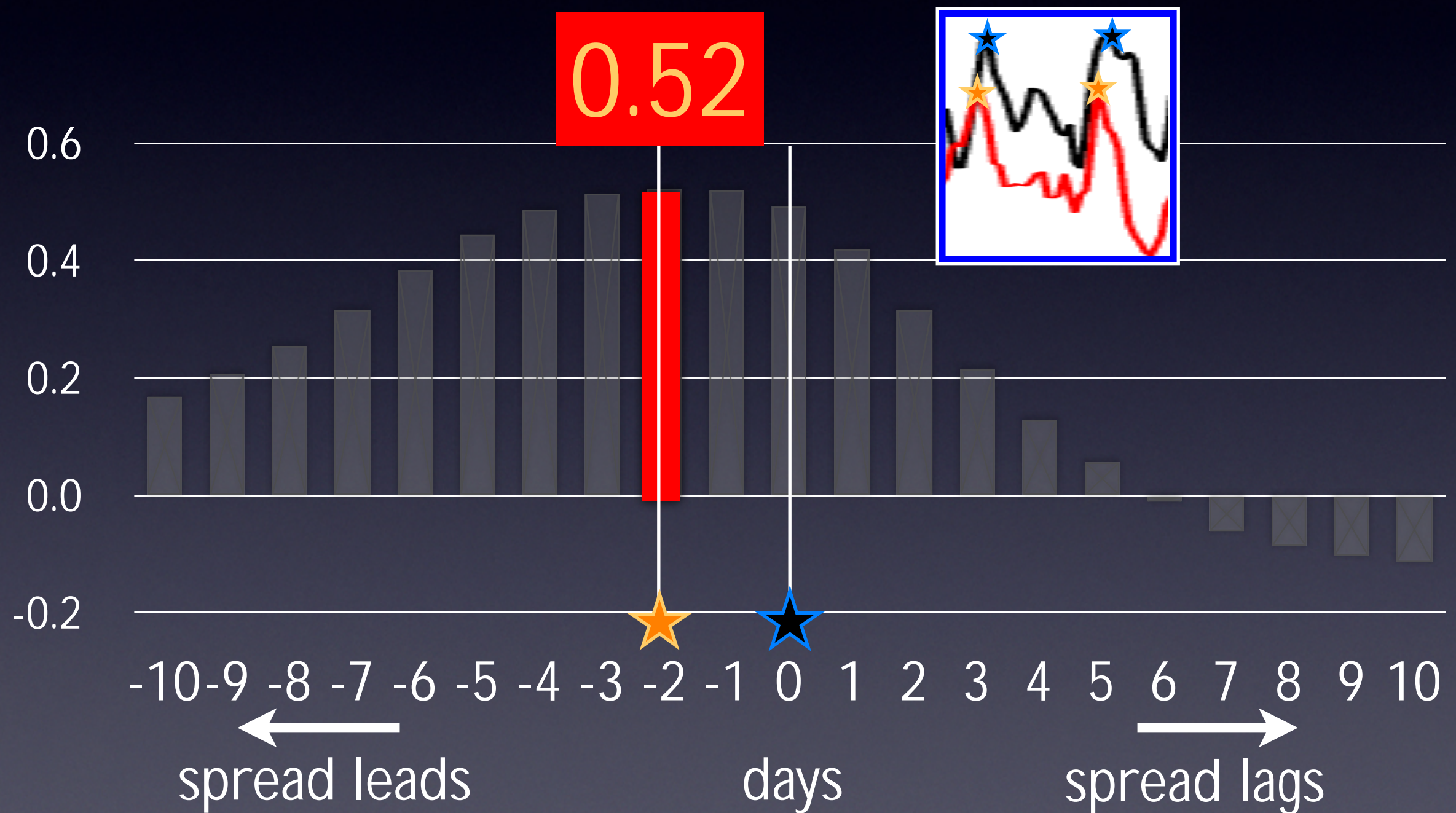
Error ahead of westerly



U analysis

U error

Lag correlation for U_{mean} & U_{spread}



ALERA

available from

<http://www.jamstec.go.jp/esc/afes/alera>

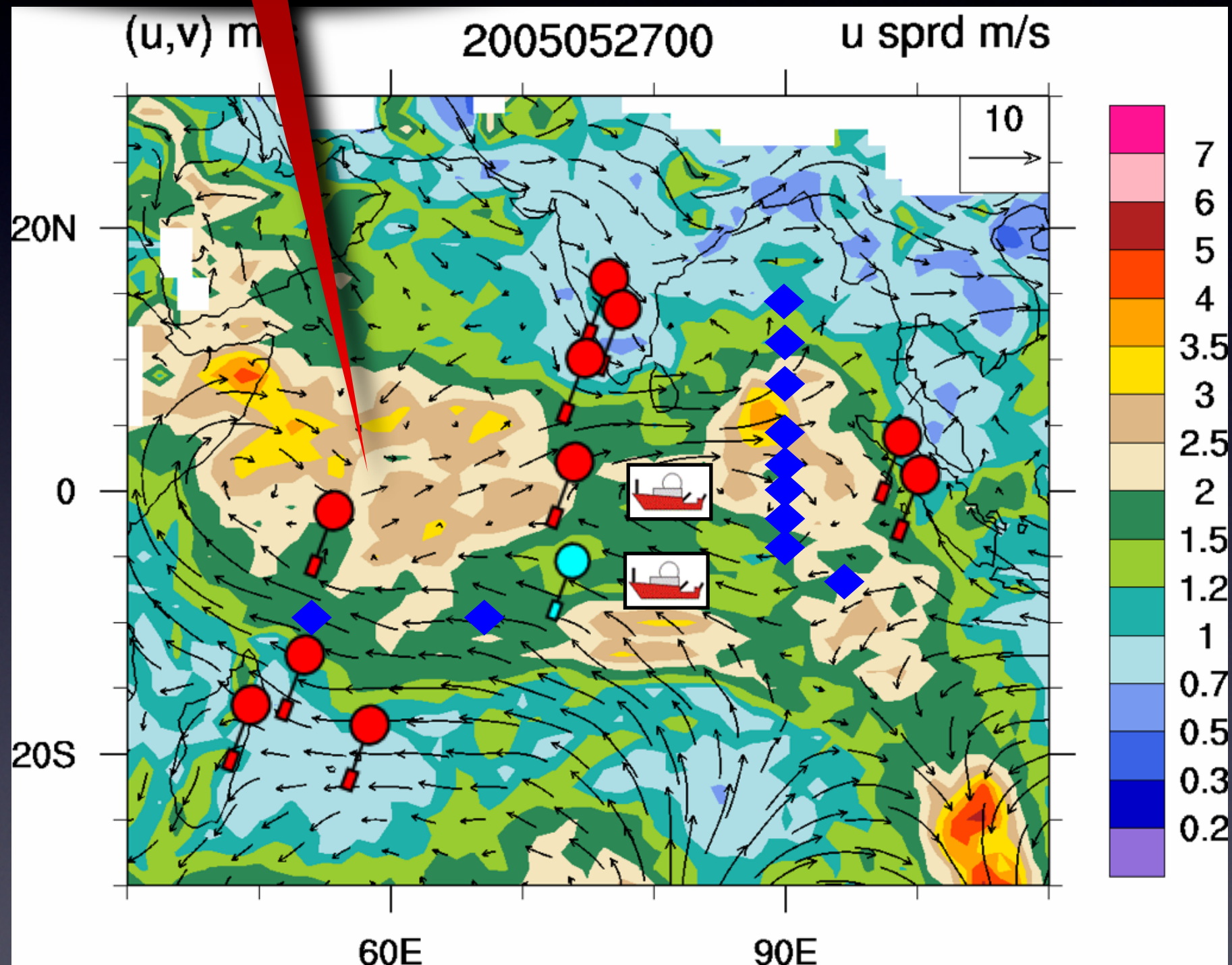
during 2005.06 - 2007.01

through OPeNDAP server.

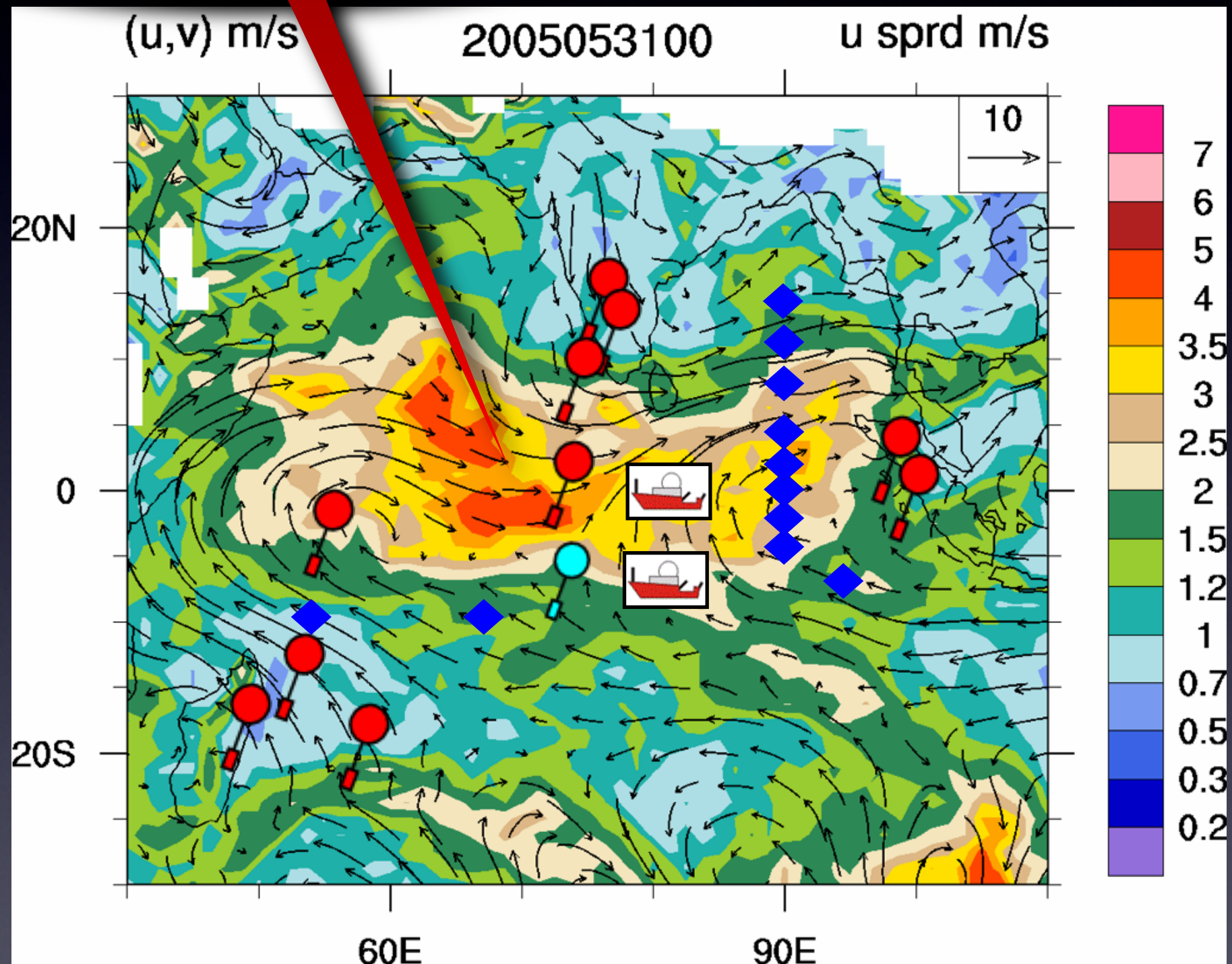
DURING

monitoring the day of the error

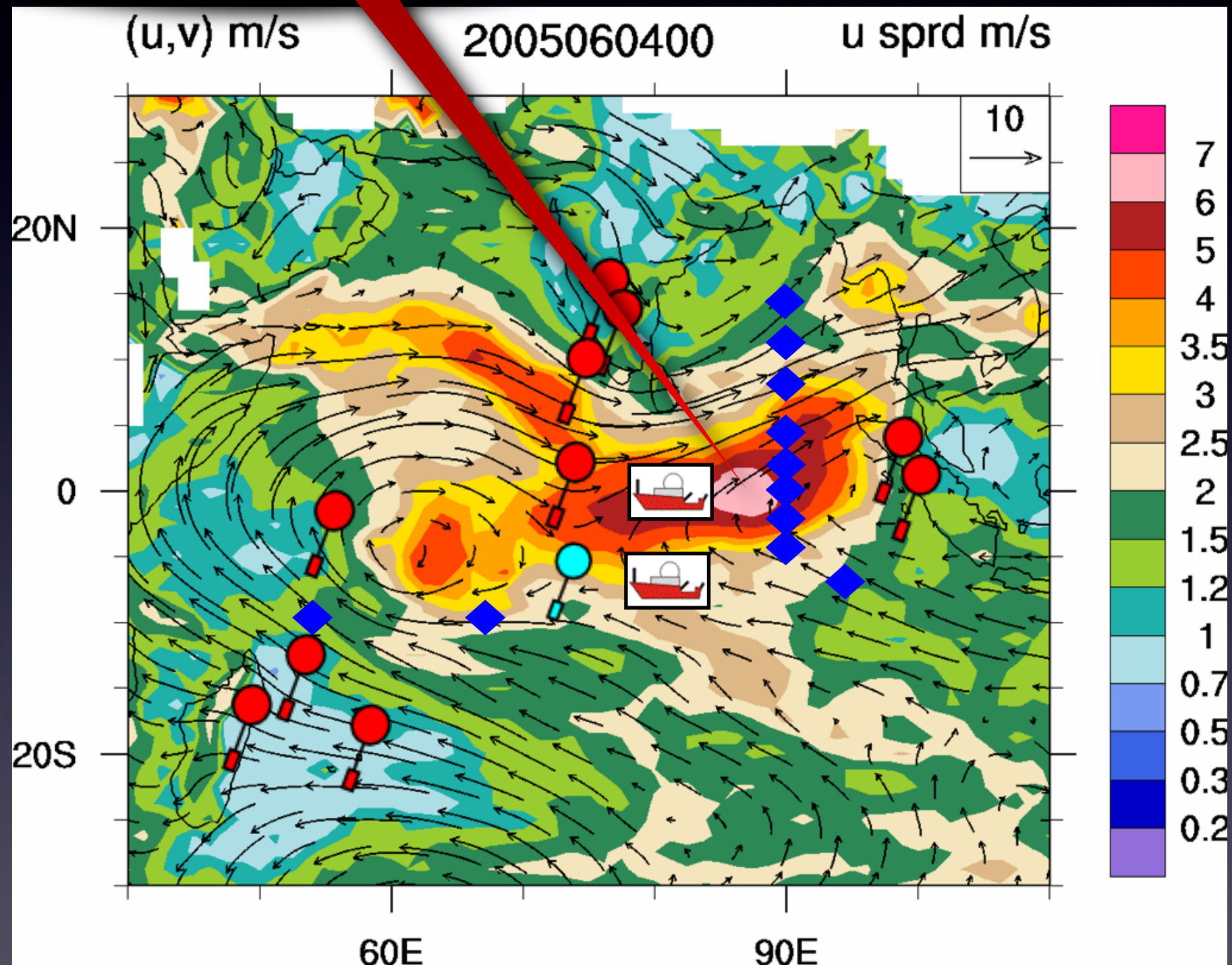
Larger errors
over western IO



Larger errors
over central IO



> 6 m/s errors
in maximum



ALERA²

has a potential

to monitor error fields and

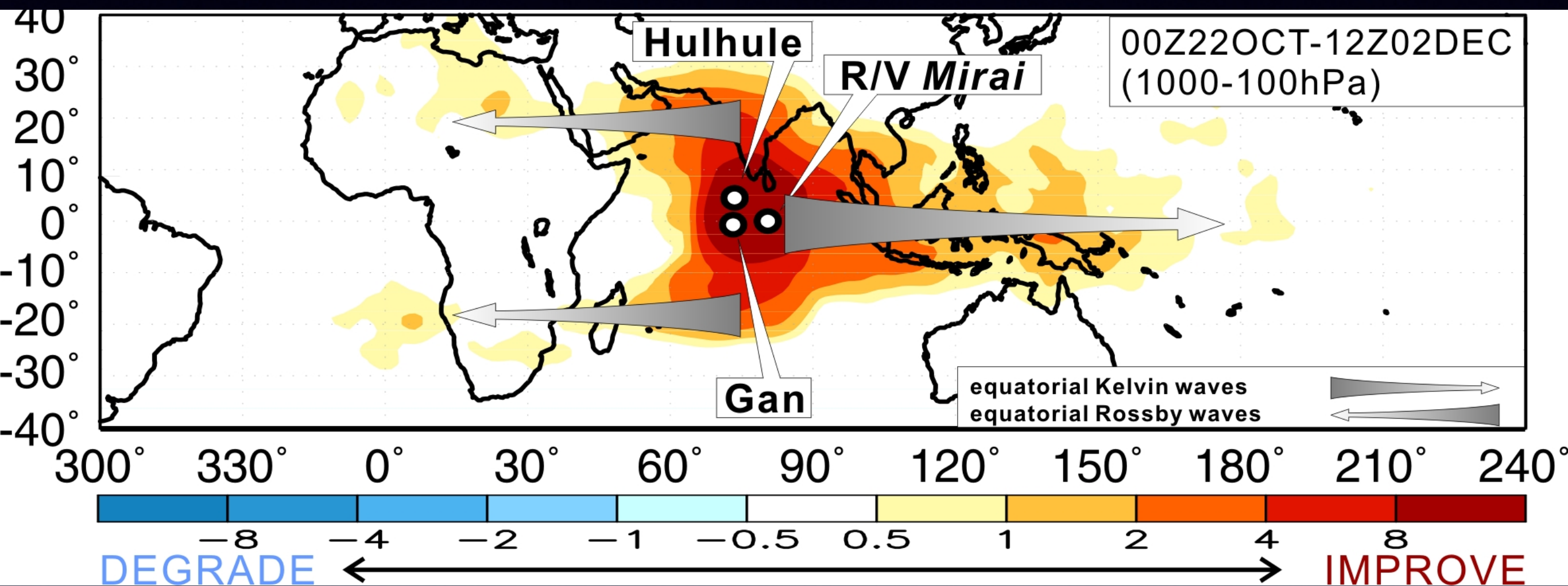
to find a precursor of dynamical phenomena

on the basis of pilot surveys.

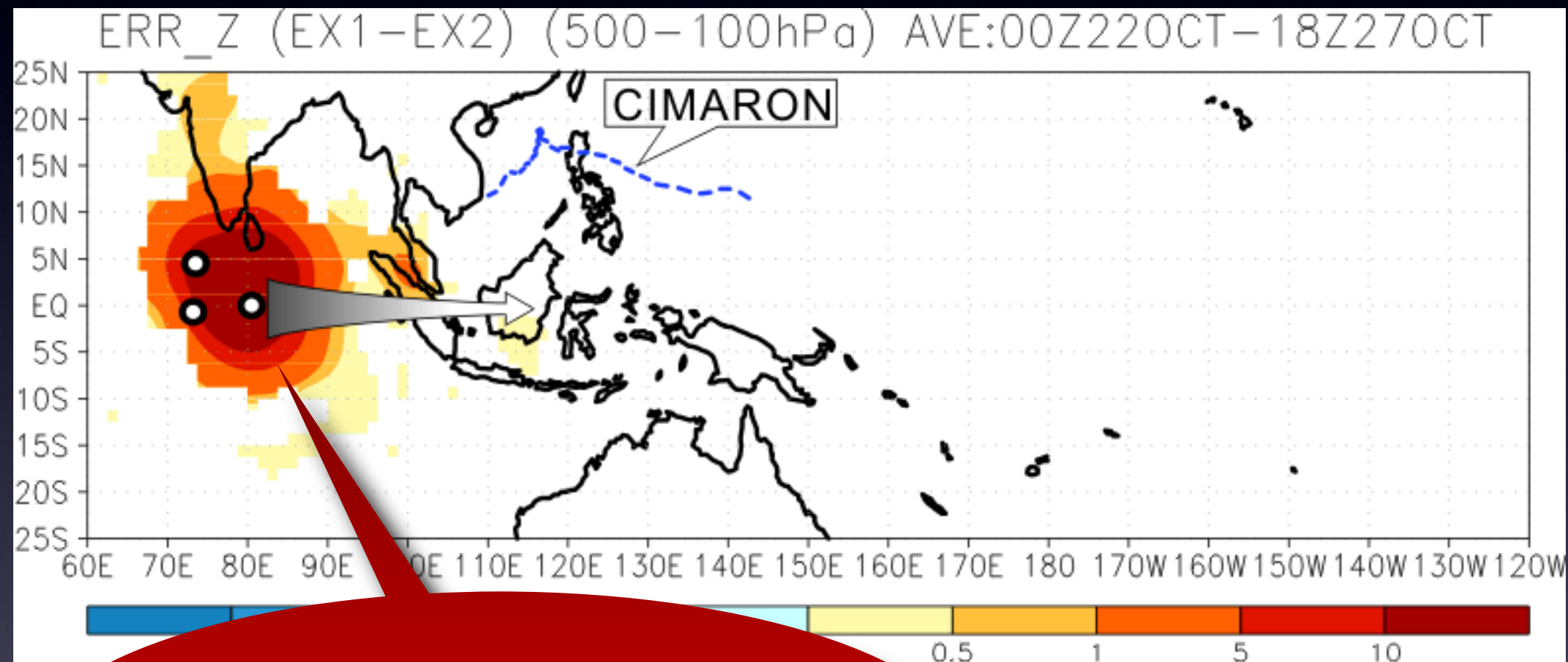
AFTER

assimilation impact of the observations

Improvement of the reanalysis quality by **MISMO2006**

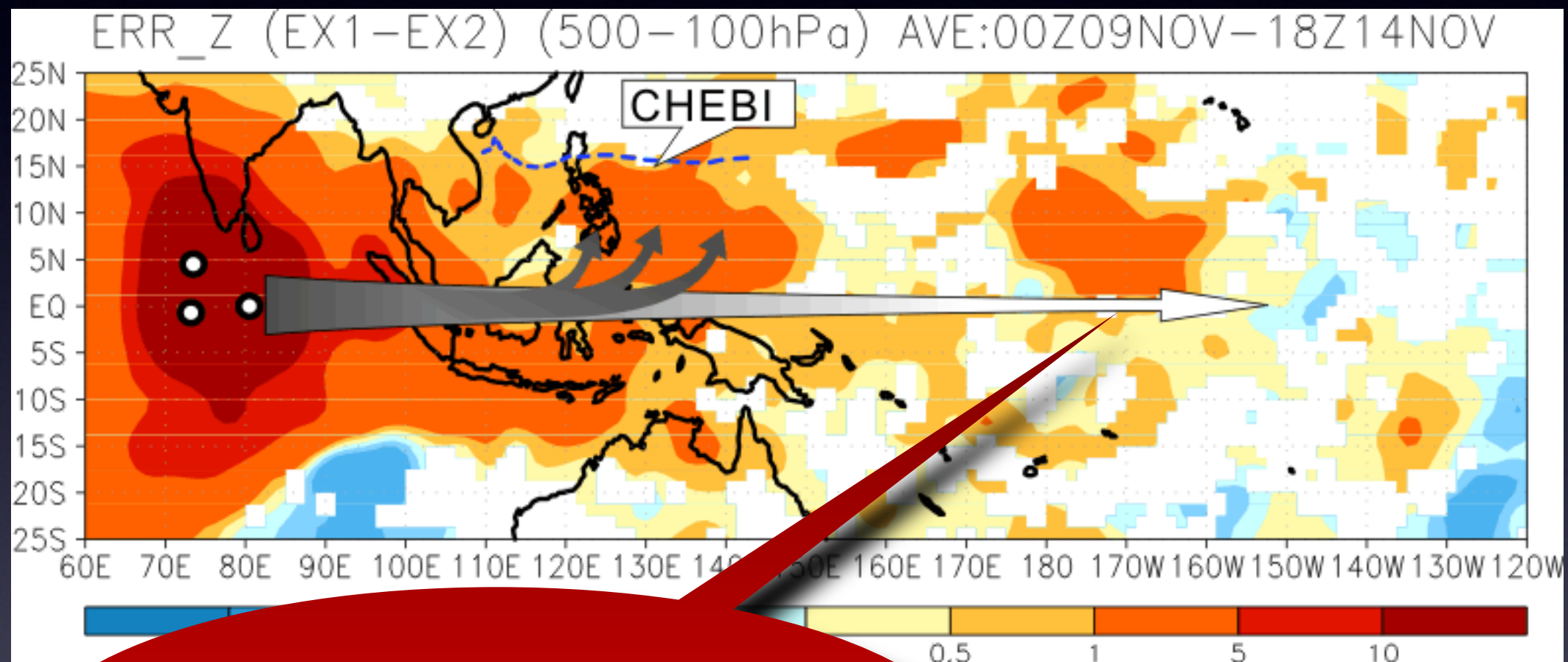


The first 5 days of MISMO2006



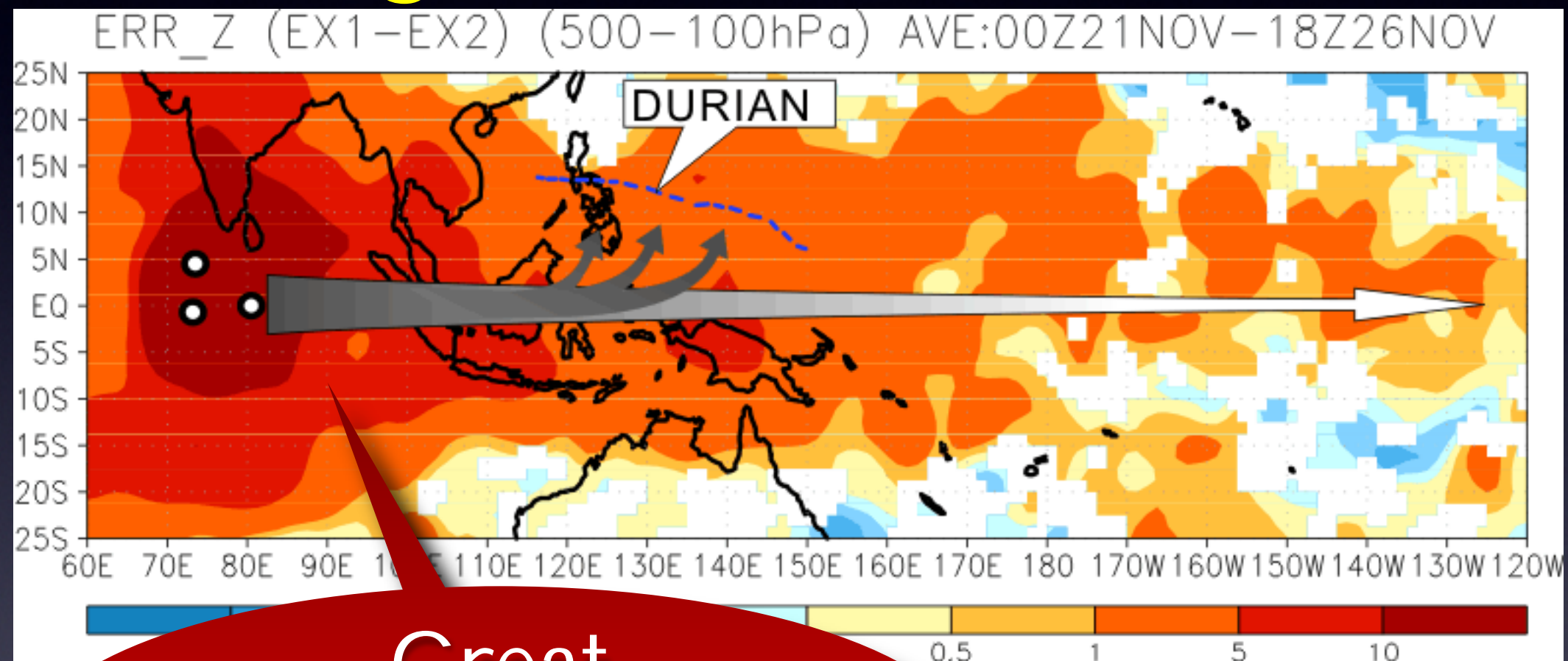
Improvement
within a limited area

The 5 days before the weak MJO



Extending
at 15 m/s

The 5 days during the weak MJO



Great
improvement!!
> 5 %

ALERA²

is able to provide

assessments of the **impact** of the campaign

and

progresses on understanding tropical waves.

Contributions

pilot surveys BEFORE C/D

monitoring DURING C/D

OSEs AFTER C/D

pilot surveys

Objective evaluation of
the value of
CINDY/DYNAMO

OSEs

monitoring

The positive growth cycle of
optimizing field campaigns