CSSP China

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Dr Zhang Peiqun, CMA

CSSP China Aims

Developing the science needed to build climate services that support climate-resilient economic development and social welfare

In its 6th year

Strategic partnership between Met Office, China Meteorological Administration and Institute of Atmospheric Physics

Accelerated and enhanced collaborative scientific research

Climate Services developed in collaboration

1. Monitoring, attribution and reanalysis
2. Global dynamics of climate variability and change
3. East Asian climate variability and extremes
4. Development of models and climate projection systems

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5. Climate services

Underpinning Science

Effects of resolution on climate predictions

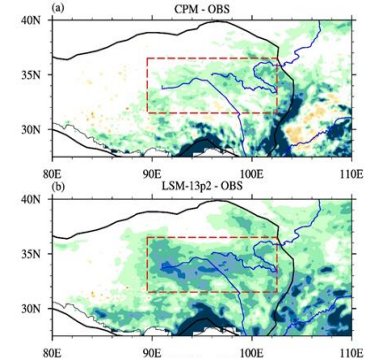
Climate model development

Mechanisms for onset of monsoons

Higher resolution models show less bias

High Res

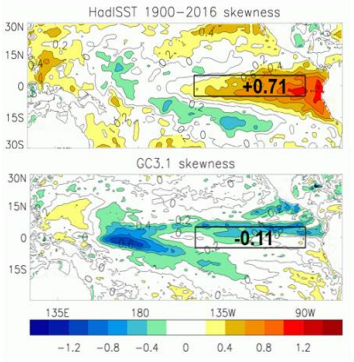
Low Res



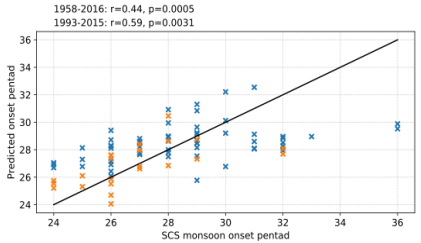
Climate models don't represent weak La Niña/strong El Niño

Obs

Model



New insights into the monsoon onset



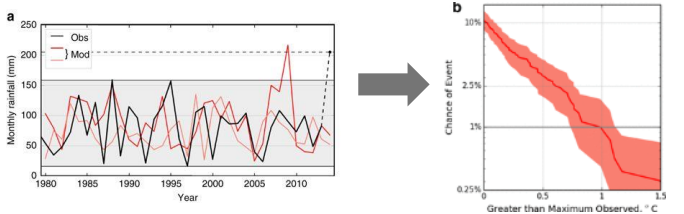
Understanding Extreme Events

New techniques for risk of climate extremes

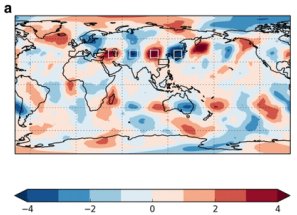
Growing effects of climate change on extremes

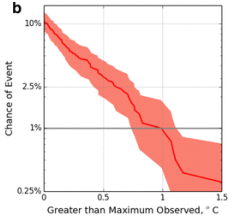
From meteorological extremes to sectorial impacts

UK Flooding



Chinese Heatwaves





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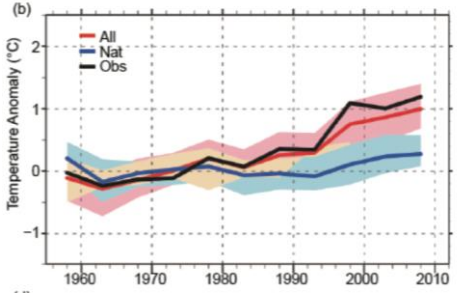
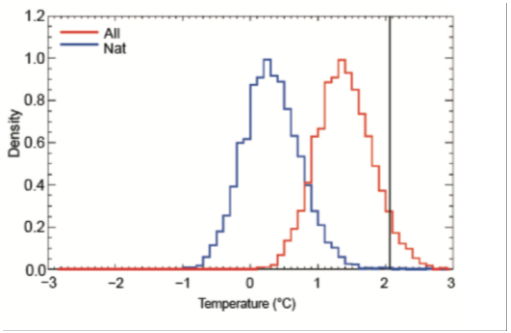
Growing climate change in China



Change in temperature



Workshops in attribution techniques

Understanding Extreme Events

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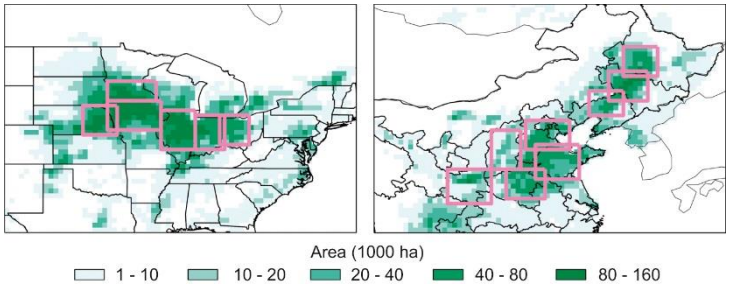
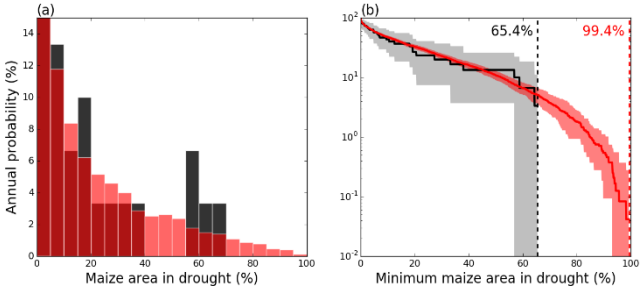
From meteorological extremes to sectorial impacts

Most of the world's maize is grown in the U.S.A. and China



Significant chance of unprecedented drought



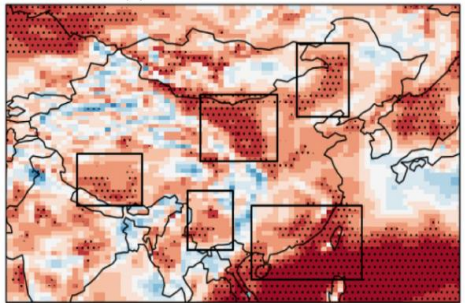
Understanding Predictability

Predictability of Chinese winter winds

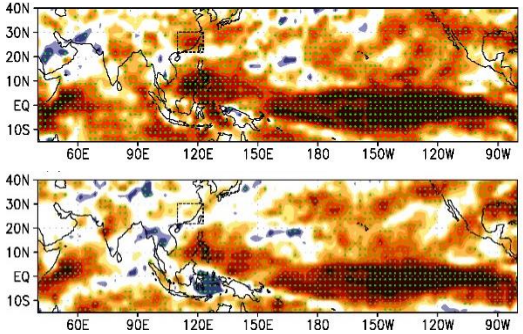
Predictability of Chinese winter rainfall

Predictability of Chinese summer temperatures

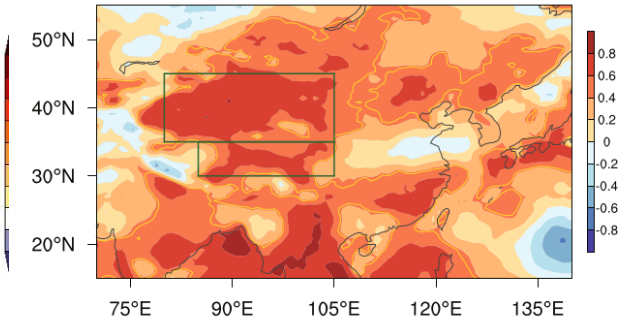
Seasonal prediction skill – winter windspeed



Seasonal prediction skill – winter rainfall



Seasonal prediction skill – summer temperature

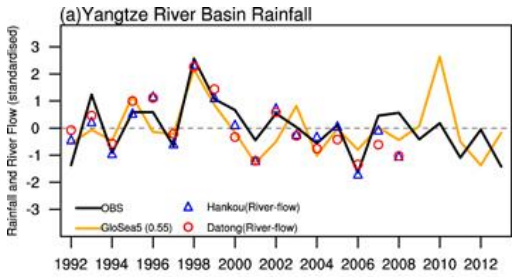


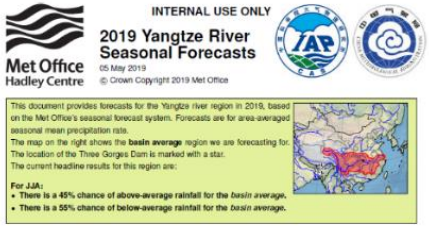
Prototype Climate Services

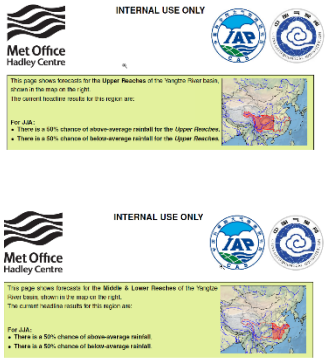
Climate prediction service for Yangtze river valley

Climate prediction service for Pacific Typhoon risk

Research on engagement and uncertainty







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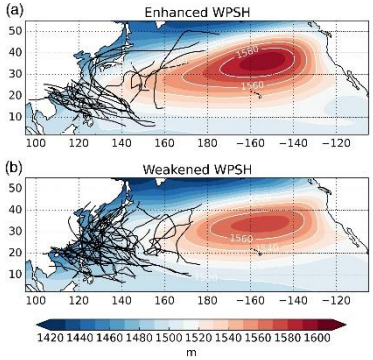

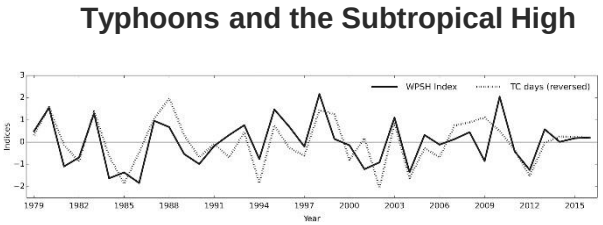

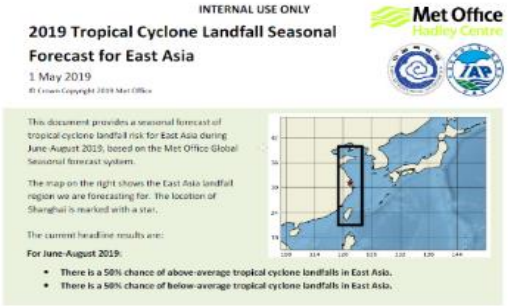

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Research on engagement and uncertainty

Identify user needs in priority sectors in China to develop prototype services:

Air quality climate information and services (University of Edinburgh, BCC, IAP)

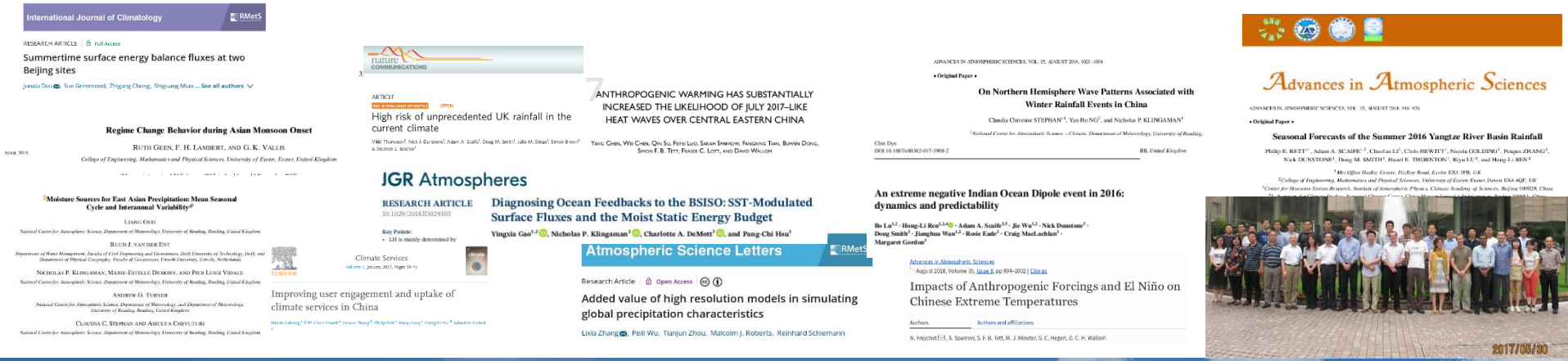
User needs for urban services (University of Reading, SOAS, Met Office,)

Collaborative Research

Strong network with over 75 scientific exchanges/workshops

~220 papers published in peer reviewed journals

Mutual benefits to UK and Chinese partners



Achievements so far

Understanding basic mechanisms and chances of extreme climate events

Transfer of expertise between Chinese and UK scientists

Forging a genuine network of regular collaborators

Increasing capability in observations, modelling and climate prediction

Finding unprecedented new climate prediction skill for China

Bridging the gap between academic understanding and practical services

Newton Fund

Met Office

中国气象局
CHINA METEOROLOGICAL ADMINISTRATION

中国科学院大气物理研究所
IAP
CAS