Section 1.1
Global and Regional Climate Change

Chair: Hideo Shiogama (NIES)

1-1 Future Climate, the Paris Agreement and Impacts on Society

Daniel Mitchell (University of Bristol)

1-2 Event Attribution with Large-Ensemble Simulations Generated by MRI-AGCM

Yukiko Imada (Meteorological Research Institute)

1-3 Changes in Frequencies of Extreme Events Due to the Past，1.5˚C and 2.0˚C Warming

Hideo Shiogama (National Institute for Environmental Studies)

Section 1.1: Global and Regional Climate Change (Global part)

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Key topics: Event attribution and HAPPI project (+1.5℃)

■ Event Attribution (EA) by Y. Imada and H. Shiogama

Comparison of the historical run with
no-warming run can answer whether risks
of extreme event have been changed
due to the past human activity.

d4PDF (MRI-AGCM) & C20C+D&A (MIP)

◎ Heat extremes in 2016

◎ Severe drought in the southeast Asia in 2015

◎ Historical change FAR estimated by d4PDF

Fraction of Attributable Risk (fraction of risk attributable to human activity)
FAR is increasing and has a annual variation and regional dependency.

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Key topics: Event attribution and HAPPI project (+1.5℃)

■ HAPPI project (+1.5/2℃) by D. Mitchell and H. Shiogama

Half a degree Additional warming :Prognosis and Projected Impact

Paris agreement set the mitigation goals of
+1.5/2K above pre-industrial levels

About 100 ensemble member in each GCM

Compare impacts under +1.5℃ and +2.0℃ climate

◎ Human health (heat wave and heat stress)

◎ Crops (wheat)

◎ Flooding (top ten largest river basin)

◎ North Atlantic storms (strength/number)