



Met Office

GCSS PCS - Precipitating cloud systems working group: updates

Jon Petch



Case studies – recent/on-going

Case 5 Transition of tropical convection (TOGA-COARE)

Coordinators: Woolnough; Willett; Petch

- An overview paper has appeared
- An NWP/climate model comparison paper has appeared
- An SCM/CRM comparison paper will appear very shortly (in press) – Woolnough et al but thanks especially to **Peter Blossey & Kuan-Man Xu**



Case studies – current

TWP-ICE case: Covered in this meeting.

From a GCSS PCS perspective:

- This is the first case with ensemble forcing (SCM; CRMs 2D)
- This is our first case with LAMs
- I am keen to make sure there is work done utilizing all 4 components of the case (GCM; SCM; CRM; LAM)
 - Perhaps also an overview paper?



Current status of TWP-ICE

TWP-ICE case:

- Several different models of all 4 types submitted
- First look at results in ARM CM meeting Oct 09
- Open to other submissions at this stage
- Tracers included in CRM & LAMs to inform TTL convection issues for SPARC but tracer analysis will follow more basic cloud/microphysics analysis



Case studies – new possible case

Idealised study of the role of convection on the TTL

Coordinator: Grabowski

- Still being considered. SPARC would still like to keep this alive

Convection over land – an AMMA based case

Coordinator: ???



Case studies – a general theme for the longer term

A comparison of oceanic and land based convection, clouds and microphysics

Can we utilize the past and planned cases:

- ARM SGP [Land]
- TRMM – LBA [Land (semi idealized)]
- TOGA-COARE (Ocean)
- TWP-ICE (Ocean with some land)
- AMMA [Tropical land]



Microphysics 1-D comparison – Ben Shipway

Microphysics	Peak graupel mixing ratio ($\times 10^{-3}$ kg/kg)
LEM SM	7.3
LEM DM	6.5
Morrison	10.2
Thompson	11.2
UM Ice+Snow	0.8
UM Snow	0.8



www.convection.info

- Following a web server crash it has been trimmed somewhat. Up-to-date now.

GCSS PCS WG - multi-model comparison studies WCRP ▶ GEWEX ▶ (GMPP) ▶ GCSS ▶ PCS ▶ InterComp

Current

TWP-ICE case: Convective transport, microphysics and the TTL

The TWP-ICE comparison work is joint with the ARM cloud modelling group.

- ▶ **Cloud-Resolving Models (CRMs)**
 - contact: Ann Fridlind <ann.fridlind@nasa.gov>
 - simulation time: 18 January - 3 February
 - case specification ([pdf](#))
 - additional information ([html](#))
- ▶ **Single-Column Models (SCMs)**
 - contact: Laura Davies <laura.davies@sci.monash.edu.au>
 - simulation time: 18 January - 13 February
 - case specification ([pdf](#))
 - additional information ([html](#))
- ▶ **Limited-Area Models (LAMs)**
 - contact: Ping Zhu <hup@fiu.edu>
 - simulation time:
 - Monsoon trough ('landfoo'): 23-25 Jan 2006
 - Suppressed monsoon: 28-30 Jan 2006
 - CRM period, 0Z 18 Jan - 0Z 3 Feb (optional)
 - case specification ([pdf](#))
 - additional information ([html](#))
- ▶ **Numerical Weather Prediction Models (NWP)**
 - contact: Yanluan Lin <Yanluan.Lin@noaa.gov>
 - case specification ([pdf](#))
 - additional information ([html](#))