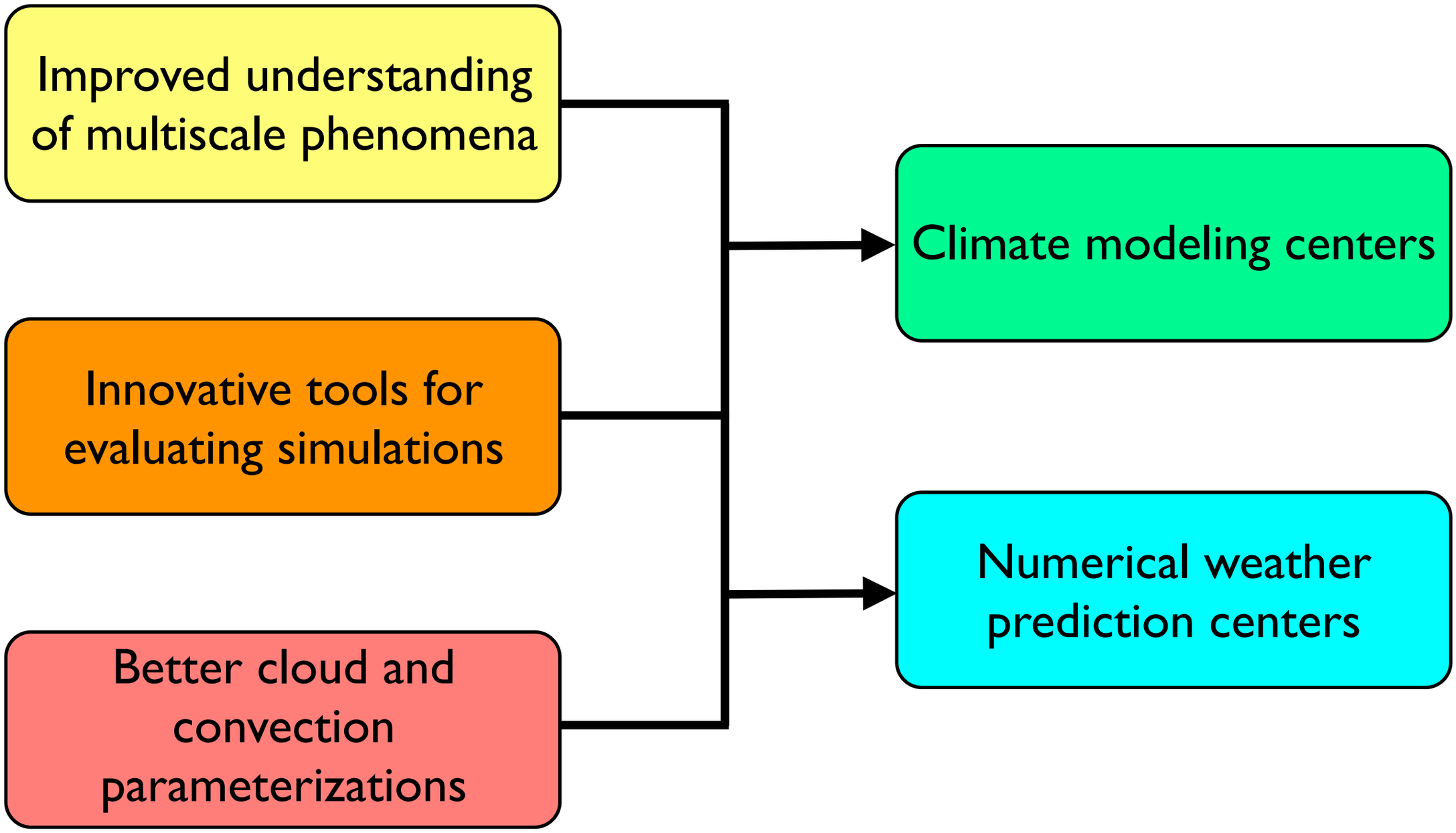
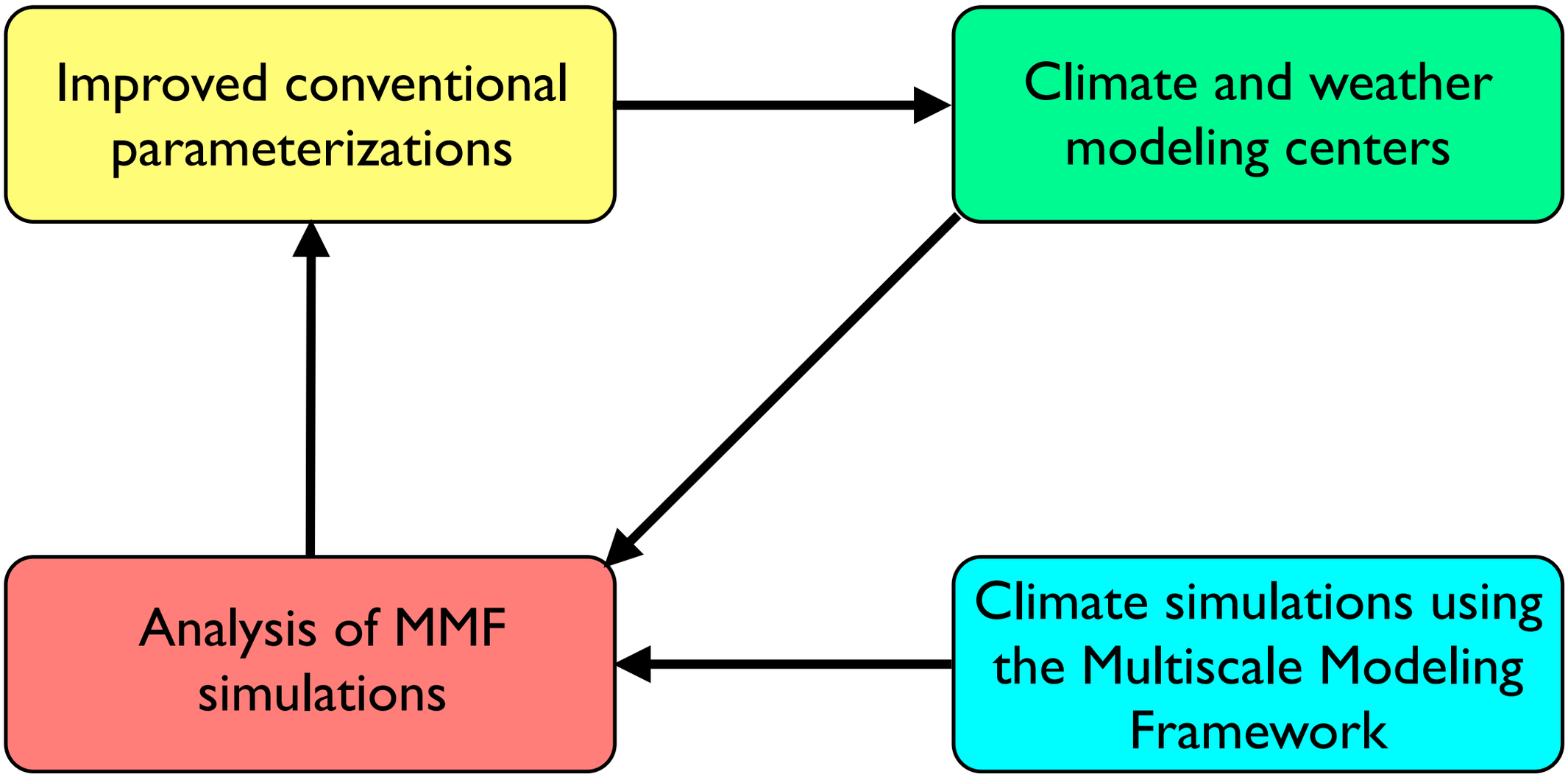
# *Goals of Knowledge Transfer with Weather and Climate Centers*



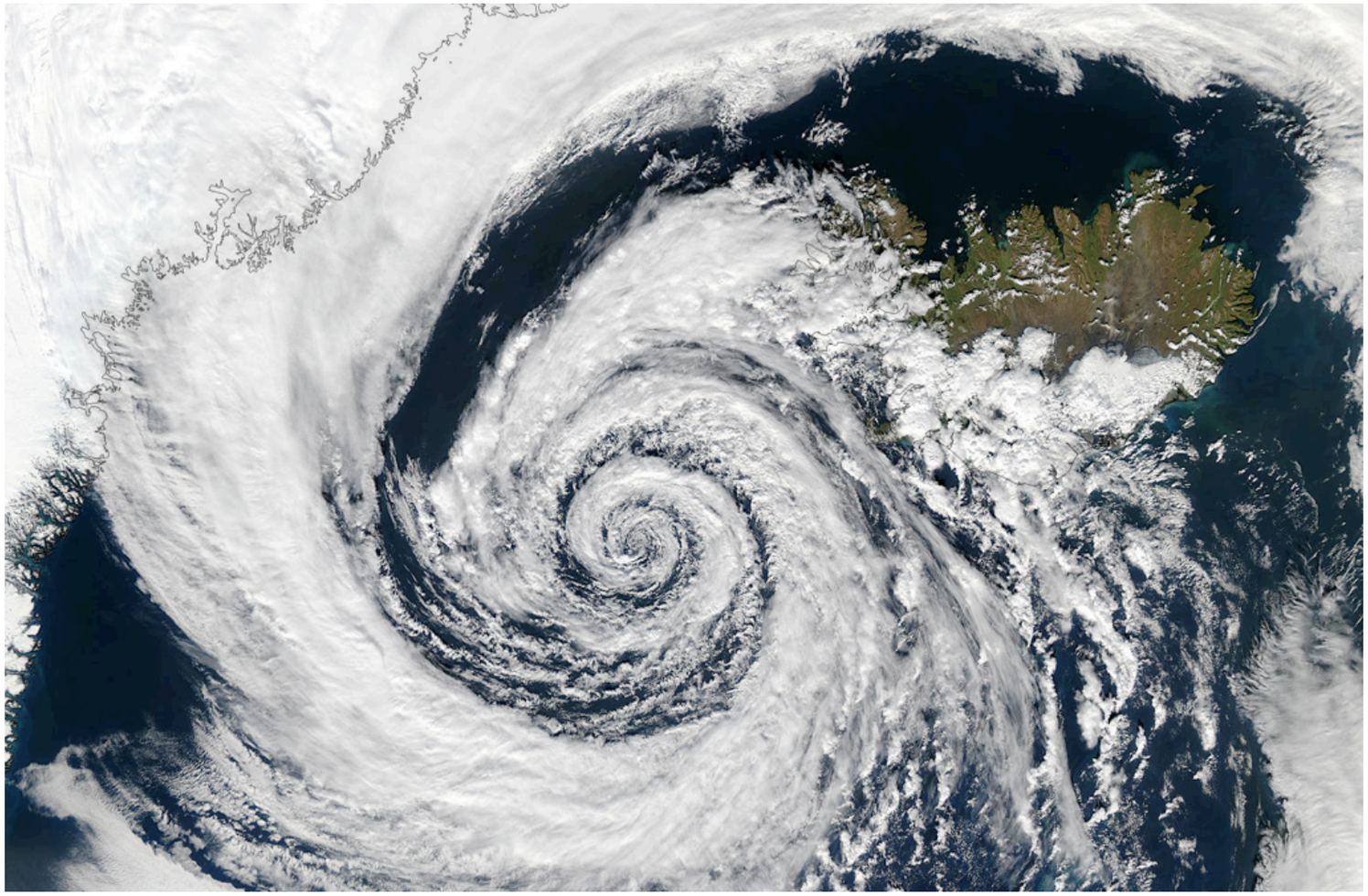
# *KT strategy: A feedback loop*



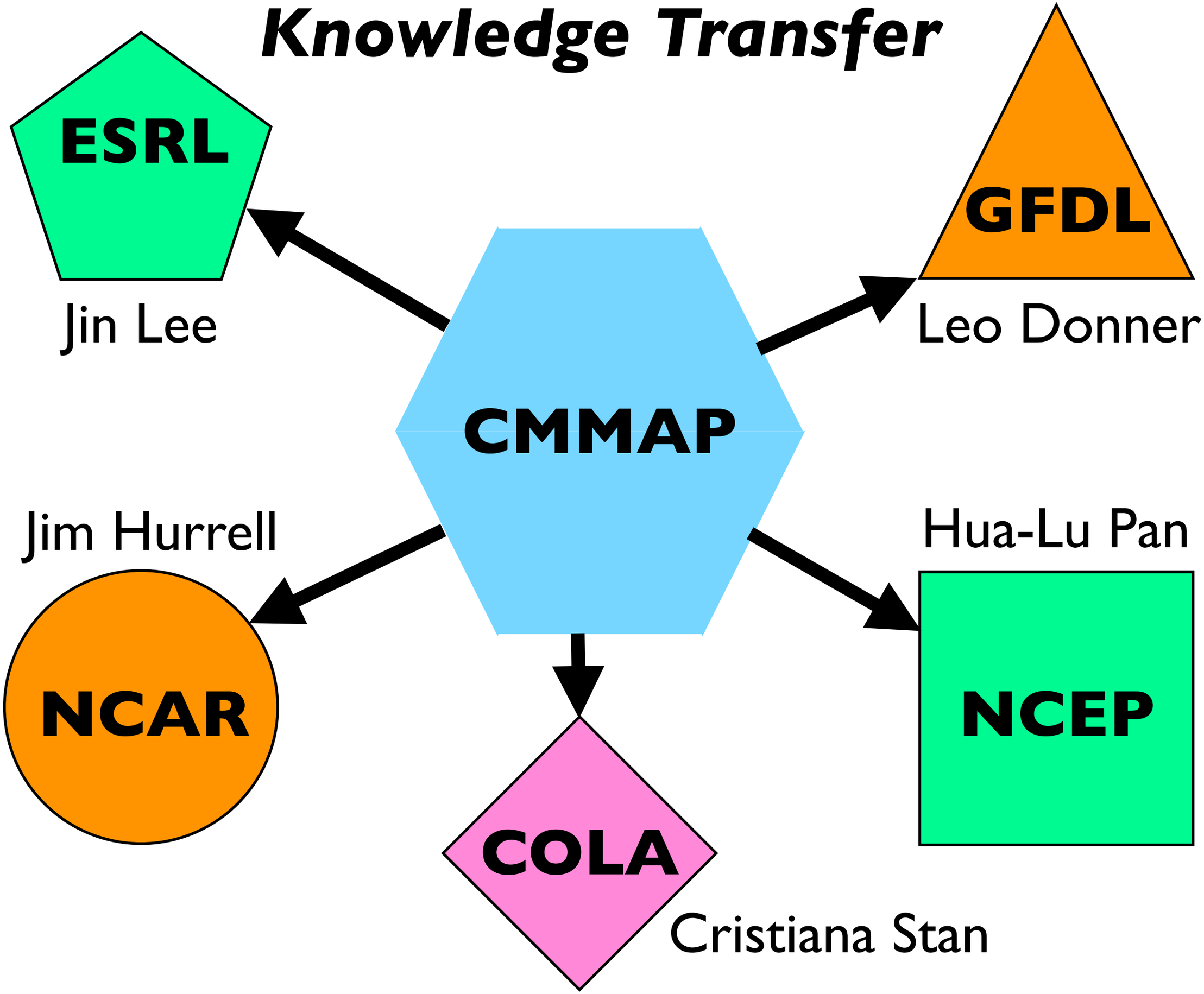
# *KT Objectives for Renewal Proposal*

1. Collaborate with the *Community Climate System Model (CCSM)* on climate change simulations.

2. Collaborate on global atmospheric model development with major modeling centers.



# Knowledge Transfer



# KT activities at the University of Utah

# Collaborate on global atmospheric model development: NCEP

- NCEP's EMC (Environmental Modeling Center) is considering using a ***cloud and turbulence parameterization*** in their global models similar to the one that Pete Bogenschutz developed and tested for CMMAP.
- NCEP's EMC is particularly interested in using analyses of the ***Giga-LES*** to improve the cumulus parameterization used in their global models.

Very-high-resolution simulations, such as the Giga-LES, are useful for improving parameterizations in the MMF **and** in conventional global and regional models.

# Collaborate on global atmospheric model development: NCEP

- *Hualu Pan at NCEP:* "How can we improve the convection parameterization used in the NCEP global models?"
  - *How does convection start over land and over the ocean?*
  - *What is the physics of the downdraft?*
  - *What determines the transition from shallow to deep convection?*
  - *What determines the height of the highest convective cloud tops?*

# Collaborate on global atmospheric model development: GFDL

• CMMAP will provide Leo Donner with *geographically and seasonally varying* convective vertical velocity pdfs (probability density functions) for his cumulus parameterization.

• The pdfs will be obtained from the MMF.

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# Cumulonimbus Vertical Velocity Events in GATE. Part I: Diameter, Intensity and Mass Flux

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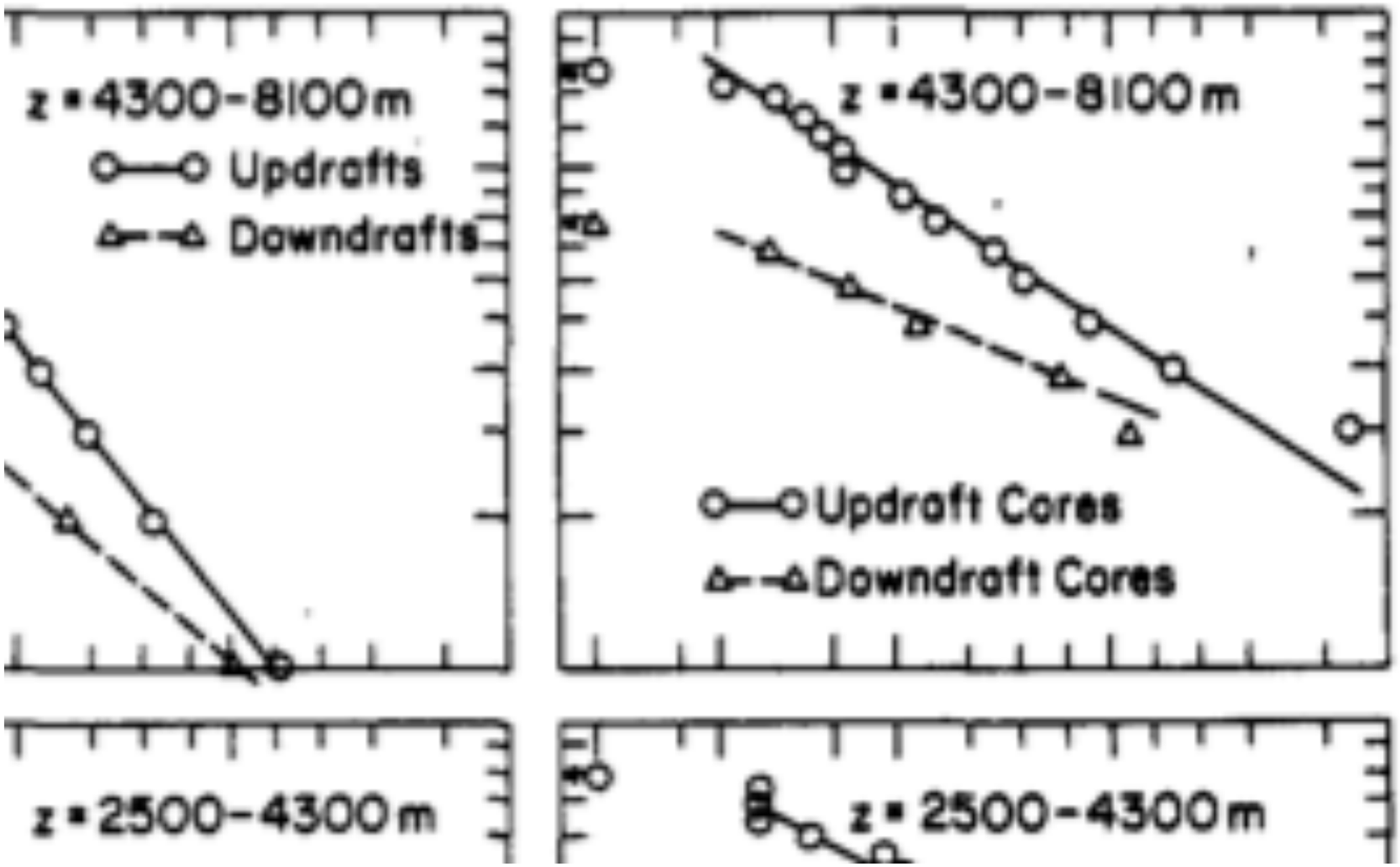
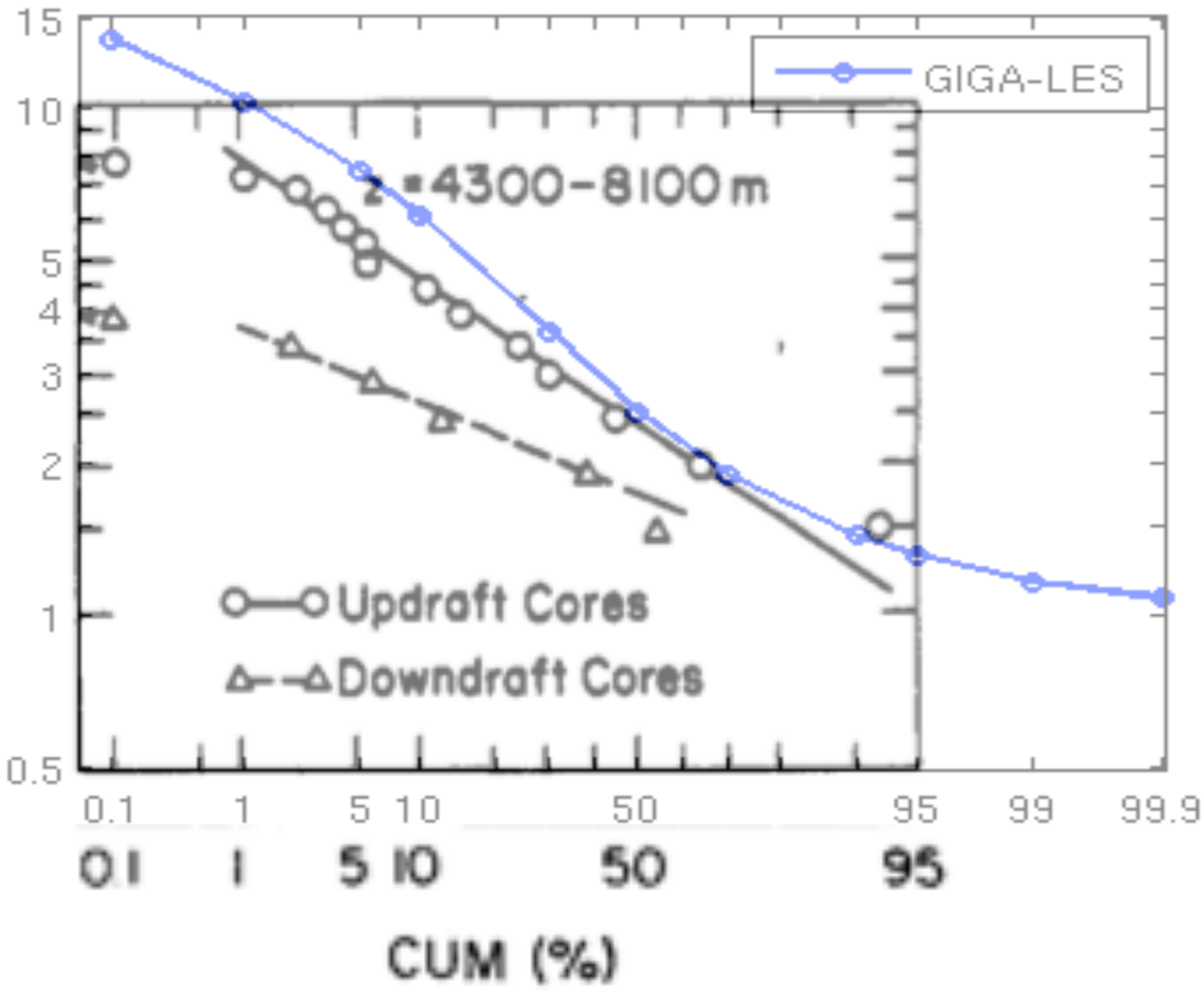
(Manuscript received 21 March 1980, in final form 18 July 1980)

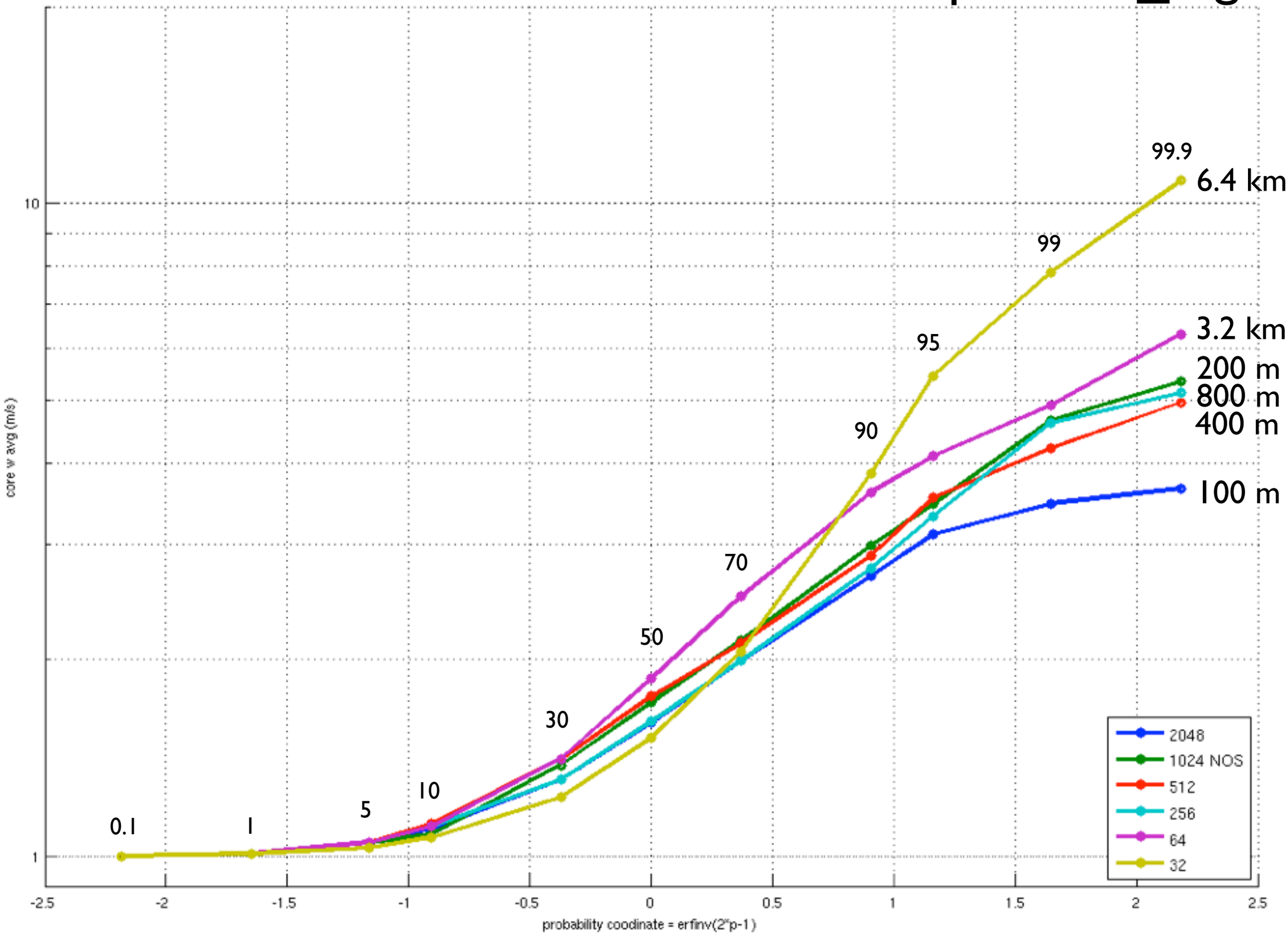
UTION BY ALTITUDE INTERVAL-ALL DAYS



(c) AVERAGE VERTICAL VELOCITY ($\bar{w}$) DISTRIBUTION BY ALTITUDE INTERVAL-ALL DAYS



# cumulative distribution of 6.4-km-core updraft w_avg



# cumulative distribution of 3.2-km-core updraft w_avg