GLOBAL ENERGY AND WATER CYCLE EXPERIMENT
(GEWEX)
AND
THE CONTINENTAL-SCALE INT'L PROJECT (GCIP)

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The Complex Role of Water in Climate Processes

- Atmospheric vapor & aerosols
- Evaporation
- Cooling
- Precipitation
GEWEX OBJECTIVES

ESTIMATE OF THE GLOBAL WATER CYCLE
FLUXES AND RESERVOIRS

- DETERMINE THE HYDROLOGICAL CYCLE BY GLOBAL MEASUREMENTS
- MODEL THE GLOBAL HYDROLOGICAL CYCLE
- IMPROVE OBSERVATIONS AND DATA ASSIMILATION
- PREDICT RESPONSE TO ENVIRONMENTAL CHANGE
GCIP OBJECTIVES

- DETERMINE TIME/SPACE VARIABILITY OF HYDROLOGICAL CYCLE OVER A CONTINENTAL-SCALE REGION
- DEVELOP MACRO-SCALE HYDROLOGIC MODELS, COUPLED TO ATMOSPHERIC MODELS
- DEVELOP INFORMATION RETRIEVAL SCHEMES
- SUPPORT REGIONAL CLIMATE CHANGE IMPACT ASSESSMENT
GCIP, GCSS, AMIP AND
SCALE-INTERACTIVE MOIST PROCESSES

ATMOSPHERIC MODEL
INTERCOMPARISON PROJECT (AMIP)

- CLIMATE/GCM INTERCOMPARISONS
- REGIONAL DISTRIBUTION AND NATURE OF CLIMATOLOGY ERRORS
- FOCUS ON "FAST" COMPONENT OF CLIMATE

GEWEX CONTINENTAL-SCALE
INTERNATIONAL PROJECT (GCIP)

- COORDINATE WITH AMIP:
  REGIONAL SKILL OF GCMs vs MESO MODELS
- COORDINATE WITH GCSS:
  TEST GCSS-DEVELOPED MOIST PARAMETERS ON REGIONAL SCALE

GEWEX CLOUD SYSTEM STUDY (GCSS)

- MULTI-SCALE INVESTIGATIONS OF CLOUD PROCESSES JOINS OBSERVATIONS AND MODELS
- DEVELOP NEW CLOUD, CONVECTION PARAMETERS
- USE TRAILFINDER/ARM SITES AS MAJOR DATA SOURCE
GCIP FIELD CAMPAIGNS

• FEW, FOCUSED
  -- TEST MODELS
  -- VALIDATE REMOTE SENSING DATA

• COOPERATIVE MULTISCALE EXPERIMENT
  SPRING/SUMMER '95 (CMESS)
  -- STUDY MESOSCALE CONVECTIVE SYSTEMS
    IN CENTRAL U.S.
  -- USWRP, DOE/ARM, FAA, GVAP, GCSS, GCIP

• 1996/97 (?)
  -- VALIDATE FLUX MODELS FORCED BY
    REMOTE SENSING AND IN-SITU DATA