Overview of Hydrology Research Groups In THU

Apetizer

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10.21.2015

Outline

1 HydroYang

2 HydroSky

3 UrbanNi

4 Hu & Tian

5 Wang & Zhao

6 ETCong

HydroYang

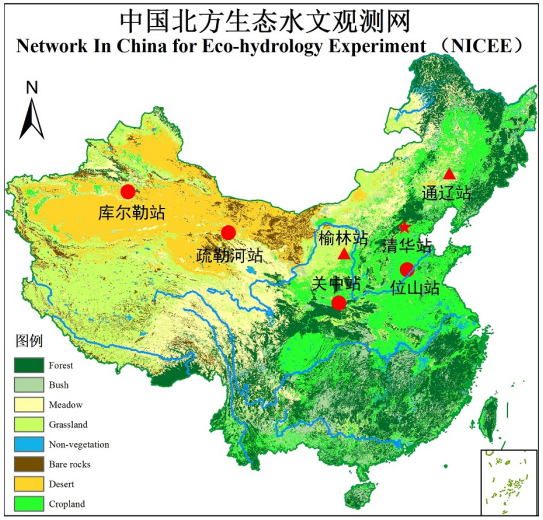
- Faculty
- Projects
  - Flux Observation Across Northern China
  - Coupling CLM with Distributed Hydrologic Model
  - Mechanism & Application of Water-Heat Correlation Pattern
  - Ecohydrology
  - Others

`http://www.hydroyang.com`

Faculty

Dawen Yang Professor	Hanbo Yang Associate Professor	Huimin Lei Lecturer

Flux Observation Across Northern China



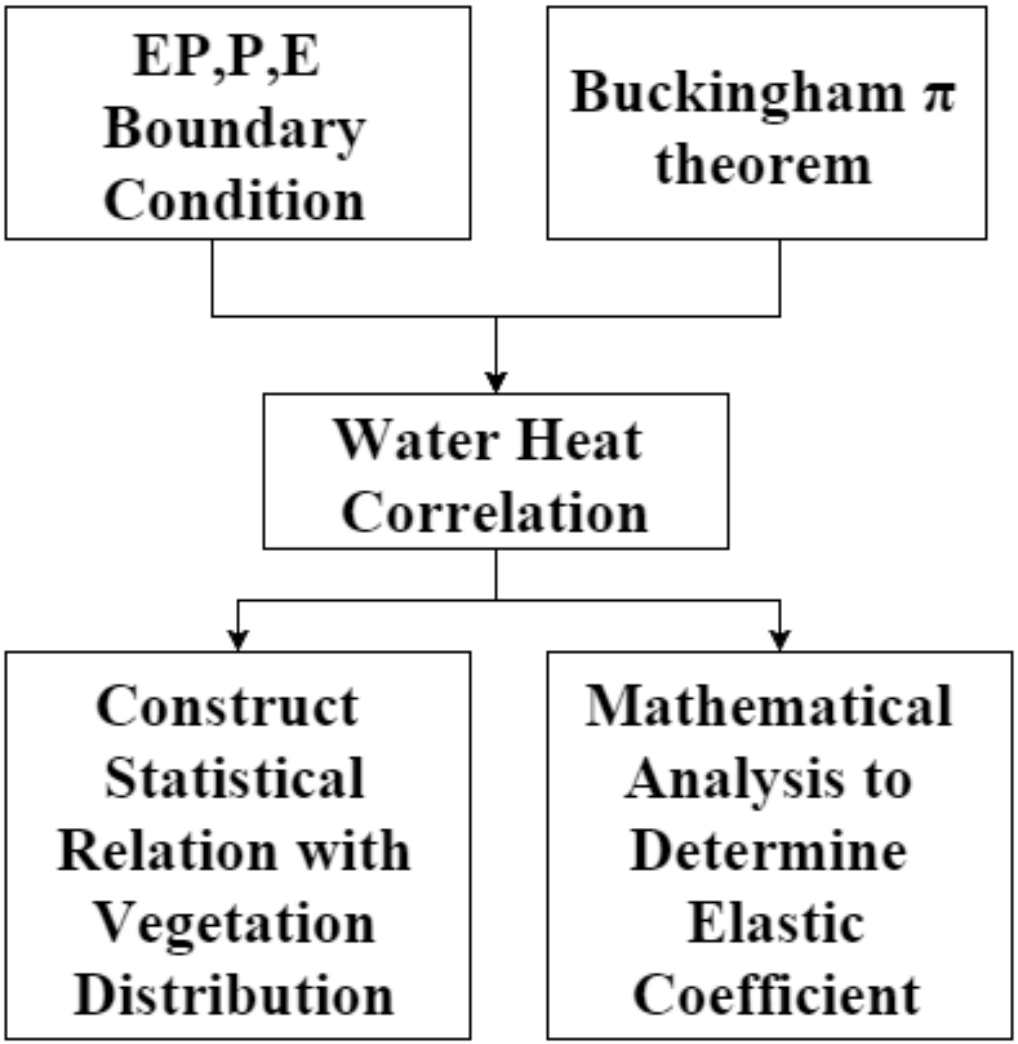
- Precipitation
  - RADAR
- Evapotranspiration
  - Eddy Covariance (EC)
  - Large Aperture Scintillometers (LAS)
  - Soil Respirator
- Ecological Terms
  - LI-2000 (NDVI, LAI)
- Common Meteorological & Pedological & Hydrological & Ecological Observers

CLM 4.5 (NCAR) + GBHM (Dawen Yang)

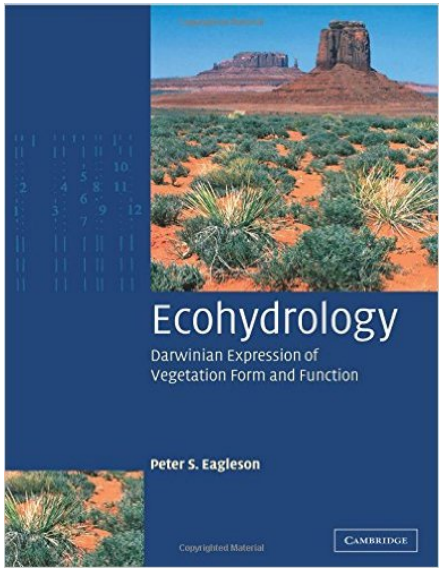
CLM Version	Hydrological Section
CLM 3.5	TOPMODEL
CLM 4.5	TOPMODEL & VIC (Optional)
CLM 5	GBHM[1]?

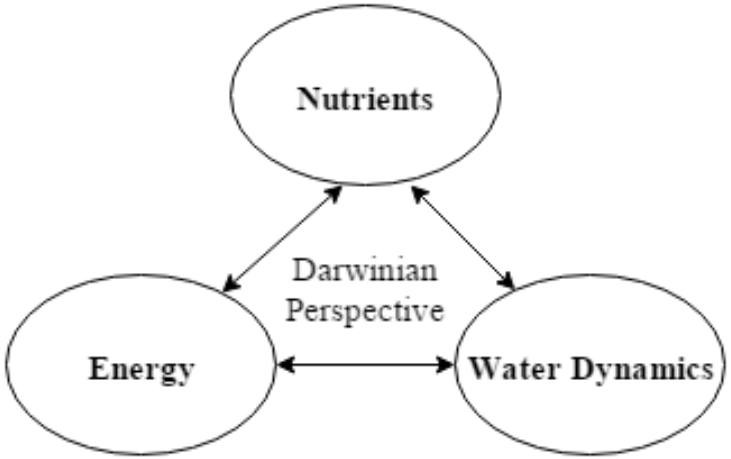
[1] Geomorphology Based Hydrological Model

Mechanism & Application of Water-Heat Correlation Pattern



Ecohydrology





- How are the physical characteristics of vegetations related to the climates and soils ?
- What is the maximum biological productivity to be expected in a given climate and soil ?

Others

Project	Principal
Hydrologic & Land Surface Modelling in Upper Heihe River Basin	Yue Qin
Data Assimilation	He Chen
Information Theory Applied in Geo Science	Wei Gong & Grey Nearing
Drought Detection	Kai Xu

HydroSky

- Faculty
- Projects
  - Global Flood Monitoring System
  - GRACE Satellite-based Water Change estimation

`http://hydrosky.org`

Faculty

Yang Hong
Professor

Di Long
Distinguished Research Fellow

Global Flood Monitoring System

Satellite Based	RADAR Based	Gauge Based
TRMM	Q2	MESONET
PERSIANN	S-band C-band	GPCC
GPCP/CMAP	Phased Array Radar	CPC Daily Gauge
...	...	...

GRACE

- Total Water Storage Estimation
- Drought & Flood Monitoring
- Signal Loss Restore with Global Hydrological Model

UrbanNi

- Faculty
- Projects
  - Urban Hydrology
  - Mechanism in Hydrometeorology
  - RADAR Precipitation Observation
  - International Riverbasin Management

`http://www.urbanmetu.org/`

Faculty

Guangheng Ni
Professor

Tongtiegang Zhao
Lecturer

Ting Sun
Post Doctor

Urban Hydrology

- Extreme Precipitation Forecast with WRF
- Hydraulic Modelling of Urban Area (Delft 3D)
- Anthropogenic Heat in Urban Environment
- Urban Evapotranspiration
- Green Roof

The Hysteresis Effect in diurnal cycles of net radiation R_n and ground heat flux G_0[2]

[2]Sun T, Wang Z H, Ni G H. Revisiting the hysteresis effect in surface energy budgets[J]. Geophysical Research Letters, 2013, 40(9): 1741-1747.

RADAR Precipitation Observation

- Rainfall District Forecast based on RADAR Observation
- Rainfall Amount Estimation

Why India and China should leave the Yarlung Tsangpo alone

Prem Shankar Jha
05.03.2014

中文版本 0 comments

By pressing ahead with plans to develop the river basin, the two countries are inviting calamity

Earthquakes in the Himalayas regularly cause landslides that block rivers (Image by Yang Yong).

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understanding asia's water crisis

主题 TOPICS

Water

Hu & Tian

- Faculty
- Projects
  - Experimental Basin
  - Hydrological Simulation
  - Social Hydrology

`http://www.thuwater.org/`

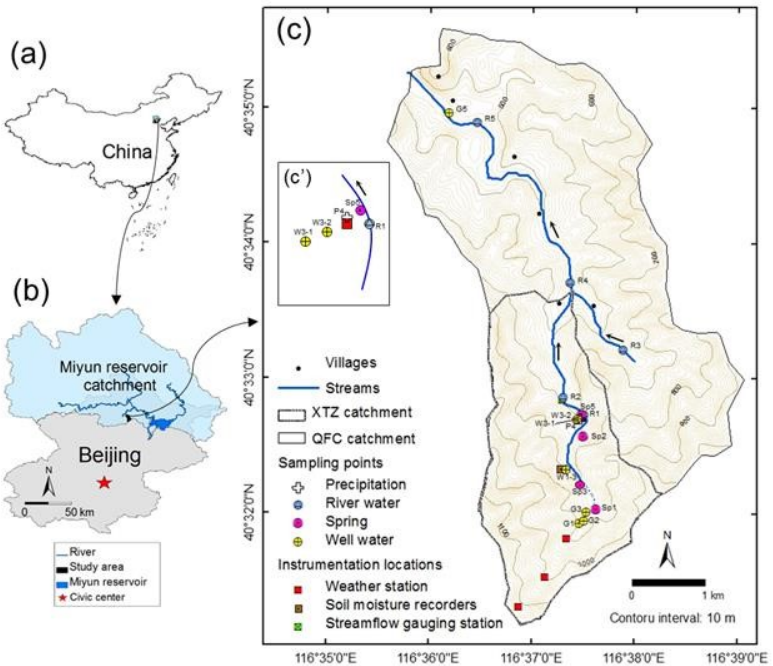
Faculty

Heping Hu
Professor

Fuqiang Tian
Associate Professor

Hongchang Hu
Lecturer

Experimental Basin



Flux Observation

Isotope Tracer

Soil CrossSection

Ecologic Observation

Wells

THREW

THREW

- Faculty
- Projects
  - Water Resources Management in Drought Area
  - Reservoir Operation

Faculty

Zhongjing Wang
Professor

Jiangshi Zhao
Associate Professor

Water Resources Management in Drought Area

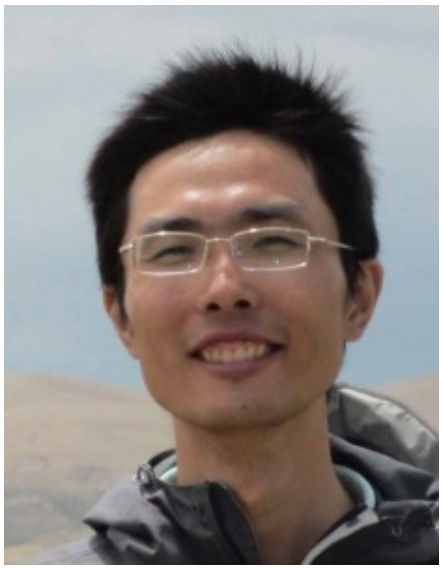
ETCong

- Faculty
- Projects
  - Flux Observation Across Northern China

`http://www.etcong.com/`

Faculty

Zhentao Cong
Associate Professor



Danwu Zhang
Post Doctor

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