Present situation and challenges of AsiaFlux
- From Activities of Workgroups in 2006 -

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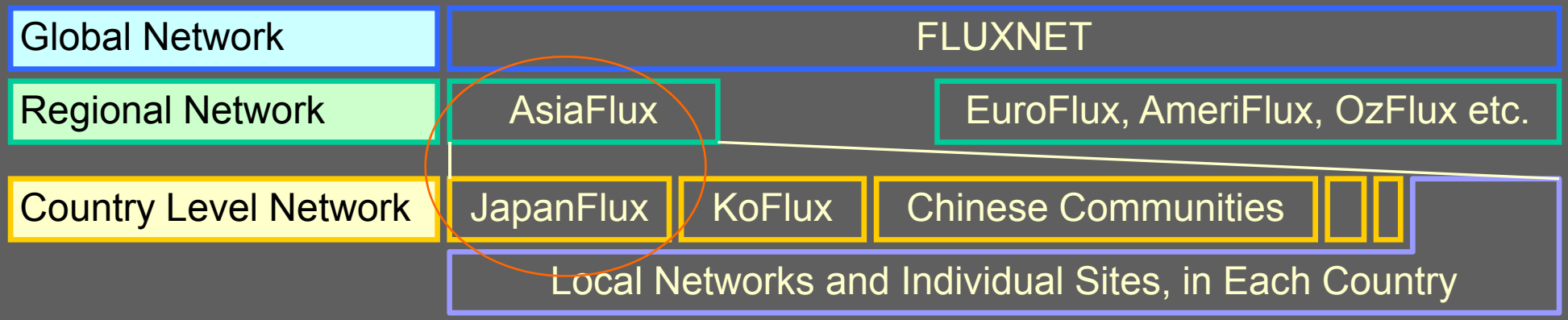
[7] Kyoto University, Kyoto, Japan

Topics in 2006

2006: AsiaFlux's phase of texture enhancement and activity development contributed from AsiaFlux workgroup activities

1. AsiaFlux to be an umbrella organization which covers Asian communities



2. Opening the 1st AsiaFlux Training Course on Micrometeorology
3. AsiaFlux policy and membership to be taken in context
4. Issue of AsiaFlux Newsletter in the updated editorial line
5. Discussion on the AsiaFlux Database and Data Policy
6. Opening the 6th International Workshop in Chiang Mai
7. New web site along the updated policy and activities
8. Development of portable flux measurement system

Sub-workgroups and their sharing of roles:

- **AsiaFlux General WG**
  - **AsiaFlux Network Management SWG**
    (e.g. Updating AsiaFlux directory and web page)
  - **AsiaFlux Editorial SWG** (e.g. AsiaFlux Newsletter)
  - **Workshop Management SWG** (e.g. AsiaFlux Workshop)
- **Measurement and Data Policy WG**
  - **Measurement Support and Standardization SWG**
    (e.g. Flux measurement and analysis methodology, site planning, and inter comparison)
  - **Short Training Courses SWG**
    (e.g. AsiaFlux training courses for flux measurement and analysis)
  - **Database and Data Policy SWG**
    (e.g. AsiaFlux data policy and data exchange mechanisms)

Financial support:

- by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT); FY 2005 - 2007
- by the Asia-Pacific Network for Global Change Research (APN); FY 2005 – 2006

AsiaFlux History Update

- Sep. 1999: AsiaFlux established
- Mar. 2000: AsiaFlux launched the “AsiaFlux Web Indexes” on the web
- Sep. 2000: 1st International Workshop (*Sapporo, Japan*)
  “International Workshop for Advanced Flux Network and Flux Evaluation”
- Jan. 2002: 2nd International Workshop (*Jeju, Korea*) KoFlux and AsiaFlux
- Dec. 2003: 3rd International Workshop (*Beijing, China*) ChinaFlux and AsiaFlux
- Aug. 2005: 4th International Workshop (*Fujiyoshida, Japan*)
- Nov. 2006: 5th International Workshop (*Chiang Mai, Thailand*)

AsiaFlux Situation Update

- Established: KoFlux in 2002
- Established: ChinaFLUX in 2002 under the project of the
  Chinese Ecosystem Research Network (*CERN*)
- Publlished: 19 volumes of the AsiaFlux Newsletter from Feb. 2002
  (Editors from Japan, Korea and China)
- Published: Booklet “The Flux Observation in Terrestrial Ecosystems” in Dec. 2003
- Convened: 13 Steering Committee Meetings
- Establish of JapanFlux in 2006 (tentative)

AsiaFlux policy and membership

Overview

→ Reflecting to the AsiaFlux web and brochure

AsiaFlux is a regional research network bringing together university and institution scientists from the Asian nations to study the exchanges of carbon dioxide (CO_2), water vapor, and energy between terrestrial ecosystems and the atmosphere across daily to inter-annual time scales.

Asian terrestrial ecosystems - the richest in the world - distribute continuously from tundra through temperate to tropical forests latitudinally and from monsoonal rainforests through semi-arid to desert biome longitudinally. Carbon sequestration of Asian ecosystems have been predicted to play a key role in global carbon cycle.

AsiaFlux was established in September 1999 and its web page was launched in March 2000. To date, there are about 100 flux sites distributed throughout the east Asian region. The first AsiaFlux workshop was held in September 2000 (WS2000) in Sapporo, and the WS2002, WS2003, WS2005, and WS2006 were held in Jeju, Beijing, Fujiyoshida and Chiang Mai, respectively.

General objectivities

→ Reflecting to the AsiaFlux web and brochure

1. To investigate the magnitude of the carbon sources/sinks for a range of terrestrial ecosystems, in respect of climate, species, age and geographical locations;
2. To understand the effect of inter and intra-annual climate variations on the magnitude of carbon, water and energy exchanges of terrestrial ecosystems;
3. To investigate the role of soil, wood and leaves biomass respiration on of the ecosystem carbon exchanges;
4. To validate the micrometeorological method against the standard biometric approach;
5. To investigate the role of forest management on the ecosystem carbon, water and energy cycles;
6. To study the effects of natural (wild fires, insect pests, typhoons, etc.) and human induced (logging, land use change, over grazing, etc.) disturbances on carbon and water cycles in Asian terrestrial ecosystems;
7. To coordinate the tower-based carbon flux research group with the atmospheric, oceanic, soil, and terrestrial water research groups;
8. To extrapolate the ground based measurements in both space and time by using remote sensing and modeling.

Join the AsiaFlux Network (1)

We appeal to all scientists studying carbon dioxide, water vapor and energy fluxes and to modelers to join AsiaFlux. All results will be integrated and shared through the AsiaFlux workshops and collaborative field studies.

Membership

1. All AsiaFlux members need to understand our objectivities and intend to participate in our activities;
2. All members need to register with AsiaFlux by supplying the personal information required by the AsiaFlux Network Sub-workgroup (www.asiaflux.net/members);
3. All members will be subscribed to the AsiaFlux Mailing List.

Join the AsiaFlux Network (2)

Advantages of Membership

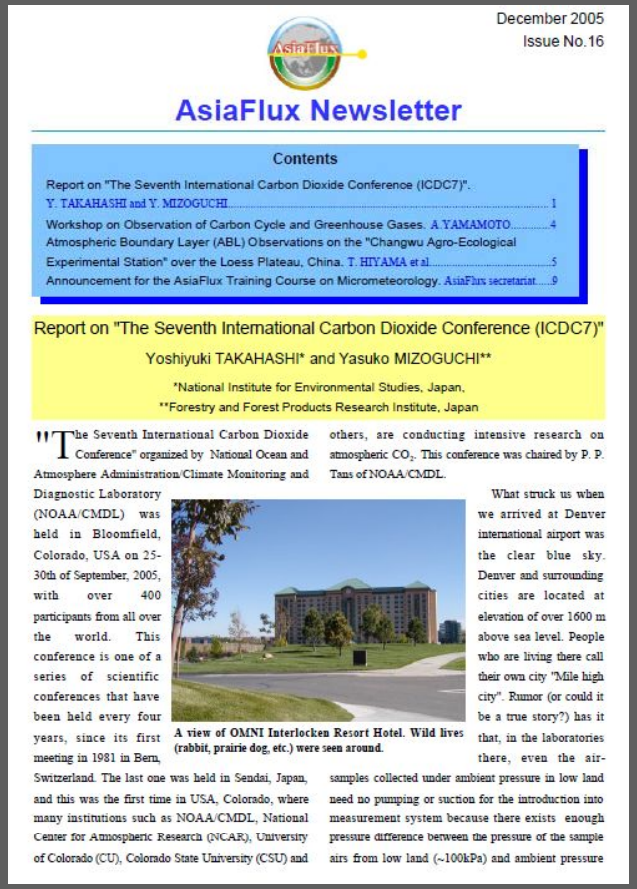
1. All members can access the member page on the AsiaFlux web site;
2. All members can make presentations at AsiaFlux workshops and contribute articles to the Newsletter;
3. All members can get the latest news on AsiaFlux activities;
4. All members can join the network discussion.

Information required for membership

1. Name;
2. Affiliation;
3. Contact information
   (postal address, phone number, and e-mail address);
4. Field of interest.

➧ http://www.asiaflux.net/

AsiaFlux Newsletter and brochure



December 2005
Issue No.16

AsiaFlux Newsletter

Contents

Report on "The Seventh International Carbon Dioxide Conference (ICDC7)"

Yoshiyuki TAKAHASHI* and Yasuko MIZOGUCHI**

*National Institute for Environmental Studies, Japan,
**Forestry and Forest Products Research Institute, Japan

"The Seventh International Carbon Dioxide Conference" organized by National Ocean and Atmosphere Administration/Climate Monitoring and Diagnostic Laboratory (NOAA/CMDL) was held in Bloomfield, Colorado, USA on 25-30th of September, 2005, with over 400 participants from all over the world. This conference is one of a series of scientific conferences that have been held every four years, since its first meeting in 1981 in Bern, Switzerland. The last one was held in Sendai, Japan, and this was the first time in USA, Colorado, where many institutions such as NOAA/CMDL, National Center for Atmospheric Research (NCAR), University of Colorado (CU), Colorado State University (CSU) and others, are conducting intensive research on atmospheric CO_2. This conference was chaired by P. P. Tans of NOAA/CMDL.

A view of OMNI Interlocken Resort Hotel. Wild lives (rabbit, prairie dog, etc.) were seen around.

What struck us when we arrived at Denver international airport was the clear blue sky. Denver and surrounding cities are located at elevation of over 1600 m above sea level. People who are living there call their own city "Mile high city". Rumor (or could it be a true story?) has it that, in the laboratories there, even the air-samples collected under ambient pressure in low land need no pumping or suction for the introduction into measurement system because there exists enough pressure difference between the pressure of the sample airs from low land (~100kPa) and ambient pressure

Newsletter

Brochure

Updated Editorial line:

- Editors from Asian sites
  (from China, and other inexperienced regions)
- Mechanisms to promote self-active contribution
  (open pages to introduce outcomes from sites or groups)

Quarterly, from Sep. 2005 (No.15) to Sep. 2006 (No.19)

- Published: 5 volumes
- Editors: 4 from Japan, 1 from Korea, the next will be from China
- Authors: 34 from Japan, 9 from Korea, 4 from China,
  and 1 from Thailand
- Articles: 13 from Japan, 3 from Korea, 2 from China,
  1 from Thailand, and 1 from Indonesia

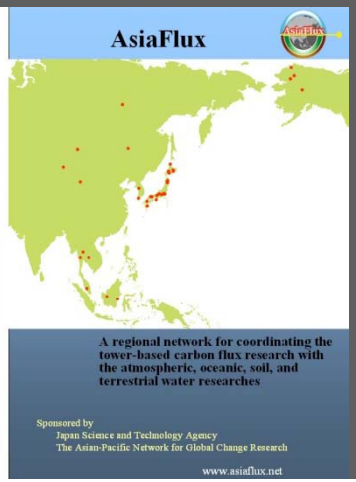
Science Steering Committee of the AsiaFlux

Executive Committee Co-Chairs
Yoshikazu Ohtani, Forestry and Forest Products Research Institute, Japan (ohtani3@affrc.go.jp)
Joon Kim, Yonsei University, Korea (joon-kim@yonsei.ac.kr)

SSC Members
Yasumi Fujinuma, National Institute for Environmental Studies, Japan (fujinuma@nies.go.jp)
Yoshiharu Fukushima, Research Institute for Humanity and Nature, Japan (yoshi@chikyu.ac.jp)
Yoshinobu Harazono, University of Alaska Fairbanks, USA (yoshi4y4h@ybb.ne.jp)
Takashi Hirano, Hokkaido University, Japan (hirano@ees.hokudai.ac.jp)
Gen Inoue, Nagoya University, Japan (inoueger@nagoya-u.jp)
Hiroshi Koizumi, Gifu University, Japan (koizumi@green.gifu-u.ac.jp)
Byonglyol Lee, Meteorological Research Institute, Korea (blee@kma.go.kr)
Donghe Lee, Yonsei University, Korea (dlee@bsg.ac.kr)
Akira Miyata, National Institute for Agro-Environmental Sciences, Japan (amiyat@niaes.affrc.go.jp)
Takehisa Oikawa, Tsukuba University, Japan (toeoika@sakura.cc.tsukuba.ac.jp)
Makoto Tani, Kyoto University, Japan (tani@biom.kyoto-u.ac.jp)
Tsutomu Yamamoto, Okayama University, Japan (yamat@cc.okayama-u.ac.jp)

Organization
General Work group
1) AsiaFlux Network Management SWG
2) AsiaFlux Editorial SWG
3) Workshop Management SWG
Measurement and Data Policy Workgroup
1) Measurement Support and Standardization SWG
2) Database and Data Policy SWG
3) Short Training Courses SWG

Secretariat (CGER, National Institute for Environmental Studies, Japan)
Yasumi Fujinuma (General, asiaflux@nies.go.jp)
Koh Inukai (asiaflux@nies.go.jp)
Satoko Yuta (asiaflux@nies.go.jp)
www.asiaflux.net

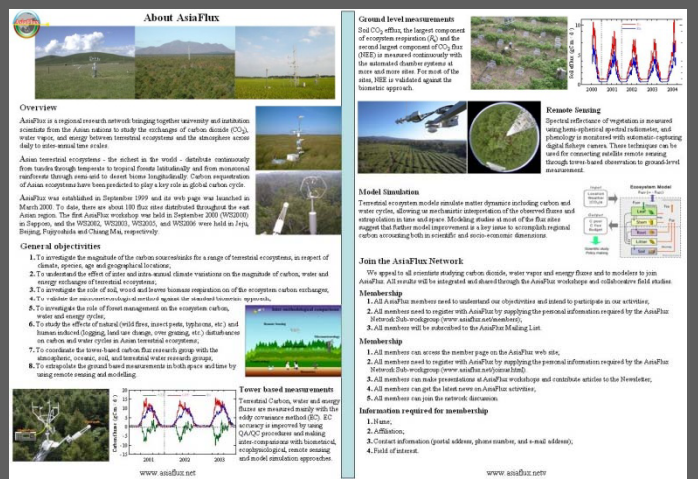


AsiaFlux

A regional network for coordinating the tower-based carbon flux research with the atmospheric, oceanic, soil, and terrestrial water researches

Sponsored by
Japan Science and Technology Agency
The Asian-Pacific Network for Global Change Research

www.asiaflux.net



About AsiaFlux

Overview

General objectivities

Tower based measurements

Ground level measurements

Remote Sensing

Model Simulation

Join the AsiaFlux Network

Membership

Membership

Information required for membership

www.asiaflux.net

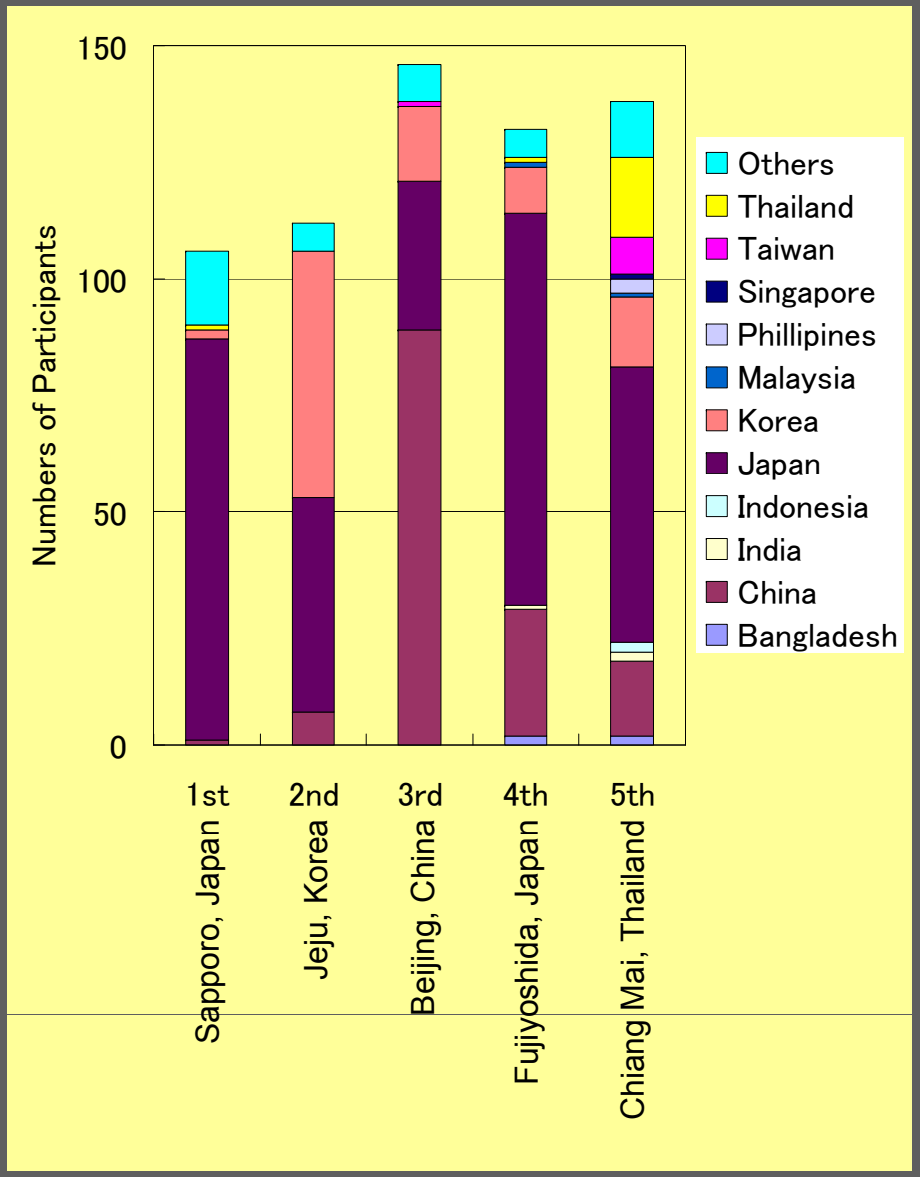
AsiaFlux Workshop

AsiaFlux encourages our activities on flux measurement and related researches in Asian region through the information exchange.

International Workshop on Flux Estimation over Diverse Terrestrial Ecosystems in Asia

– AsiaFlux Workshop 2006 –

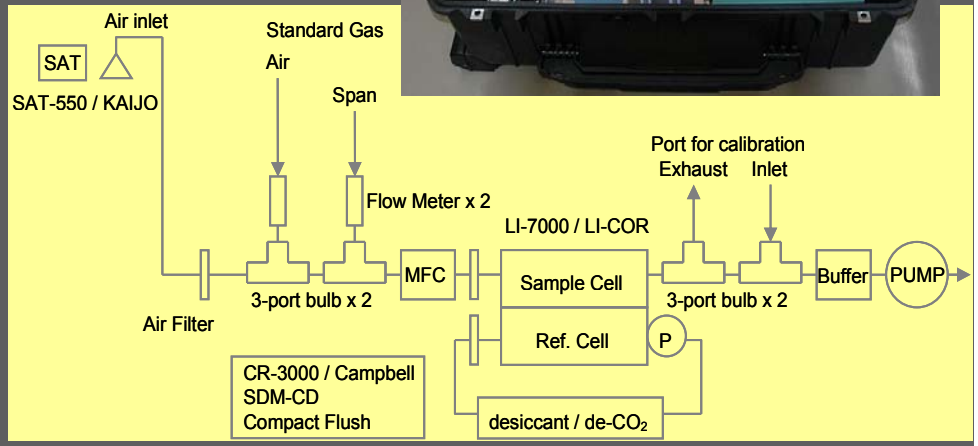
From Nov.29 to Dec. 1, 2006
Chiang Mai, Thailand
participants=
from Bangladesh, China, India, Indonesia, Japan, Korea, Malaysia, Phillipines, Singapore, Taiwan, Thailand, USA,



Measurement Support and Standardization

A portable flux measurement system:

Both closed- and open-path eddy covariance coexist in AsiaFlux. We are preparing portable system (both CPEC and OPEC) for making inter-comparison at your study site, if requested.
We provide technical support for new flux study sites.



A portable flux measurement system (CPEC)

Showing priority of observation elements and some recommendations in measurement

Various types of quantum sensors are compared at Fujiyoshida site, Japan (by courtesy of Y. Mizoguchi, FFPRI).
Arrayed sensors are LI-190SA (Licor, USA), IKS-27 (Koito, Japan), PAR-01 (Prede, Japan), PAR Lite (Kipp&Zonen, the Netherlands) and ML-020P (Eko, Japan). Laboratory tests are also made.

AsiaFlux Training Course on Micrometeorology

The 1st AsiaFlux Training Course was held:
- In 21-30, Aug, 2006 in Tsukuba and Fujiyoshida;
- Aimed for diffusing basic theory and observation techniques to Asian flux researchers
- More than 20 participants from 10 Asian countries
- More than 10 lecturers from 5 countries (USA, Canada, Korea, China & Japan)

→ Planning TC2007 in Korea

AsiaFlux Database and Data use policy

In the next research phase

- **Integrative and inter-comparative studies** will become more important to evaluate C/water budgets across Asia region
- Development of strategies for C/water management or environment preservation

We need an original database, as a collecting/sending station for systematically-arranged data sets not to be confined to eddy covariance fluxes and meteorological data

What we can obtain from AsiaFluxDB?
How do we protect data provider's right?

Fair-Use policy

“AsiaFluxDB”is now being developed!

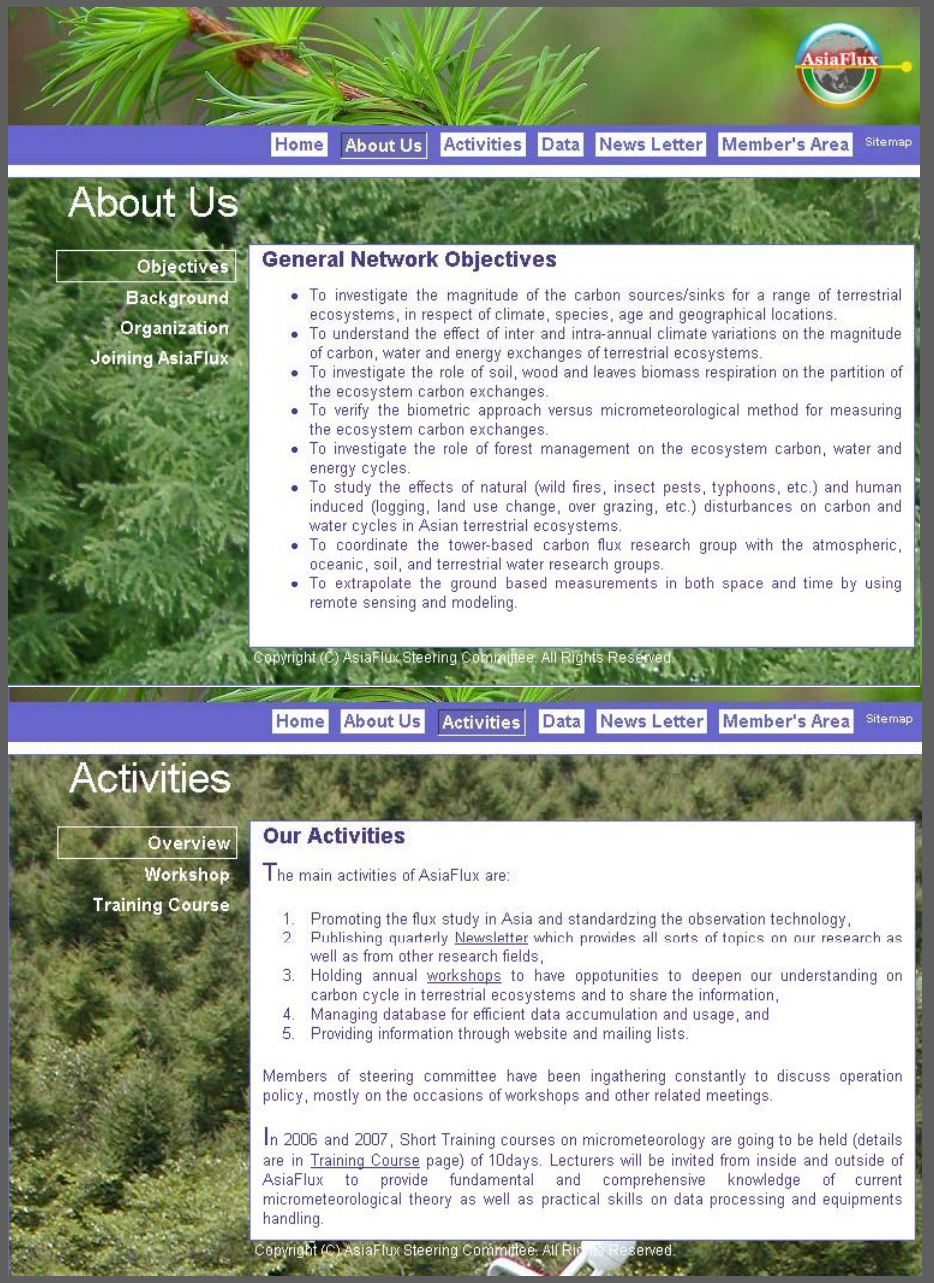
Fair-Use policy

1) Prohibition of distribution of downloaded data to the third person.
2) If data user wish to distribute the downloaded data to the third person, after post-processing and reanalyzing, datauser must inform the data provider and obtain his/her/their approval.
3) Data provider may require datauser to clear priorities to the data provider, or postpone the usage of the data because of direct conflicts to data provider's analysis.
4) Co-authorship or acknowledgement to the data provider and AsiaFluxDB.
5) Provide reprints of paper/article using data from AsiaFluxDB to the data provider and AsiaFluxDB after the publication.

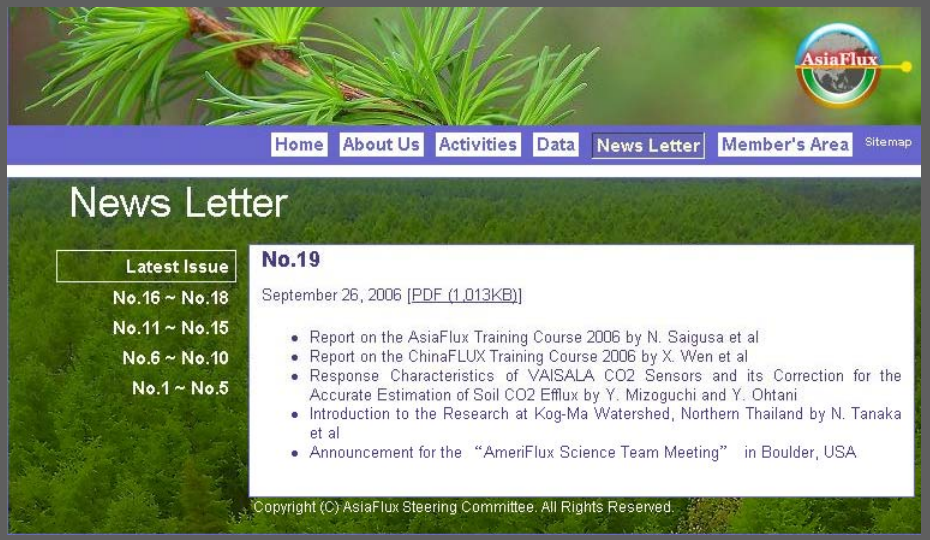
	A	B	C	D	E	F	G	H	I	J	K
1	Year	DOY	TIME	NEE	H	LE	USt	Rgs	Rn	PPFD	TPAR
2	YYYY	-	HHMM	micromol m	W m-2	W m-2	m s-1	W m-2	W m-2	micromol m	micromol m
3	2003	1	0	0.0	-3.9	0.0	0.0	0.0	-39.3	0.0	0.0
4	2003	1	30	0.0	7.9	-0.6	0.0	0.0	-45.4	0.0	0.0
5	2003	1	100	0.0	17.6	-1.2	0.0	0.0	-48.7	0.0	0.0
6	2003	1	130	0.0	13.4	-1.7	0.0	0.0	-49.5	0.0	0.0
7	2003	1	200	9999.0	9999.0	9999.0	9999.0	0.0	-47.0	0.0	0.0
8	2003	1	230	9999.0	9999.0	9999.0	9999.0	0.0	-45.8	0.0	0.0
9	2003	1	300	0.0	-3.9	-0.4	0.0	0.0	-32.3	0.0	0.0
10	2003	1	330	0.1	0.6	1.9	0.1	0.0	-33.3	0.0	0.0
11	2003	1	400	0.0	0.2	0.7	0.0	0.0	-41.8	0.0	0.0
12	2003	1	430	0.0	0.5	0.6	0.0	0.0	-40.7	0.0	0.0
13	2003	1	500	0.0	17.0	-0.5	0.0	0.0	-22.9	0.0	0.0
14	2003	1	530	0.0	-1.5						
15	2003	1	600	0.0	-10.0						

Data example (meteorological data in csv format)

7. AsiaFlux New Web Site



Present situation and challenges of AsiaFlux – From Activities of Workgroups in 2006 -



http://www.asiaflux.net/

Dr. Hideji Kida,
professor emeritus at
Kyoto University
(from his web page)

It is with deep regret that we must inform you of Dr. Hideji Kida's passing on November 13 at the age of 64.
He had been a member of the AsiaFlux steering committee from its establishment.

He was professor emeritus at Kyoto University, internationally recognized atmospheric science researcher, served as a councilor of the Japan Geoscience Union and director of the Meteorological Society of Japan.

We are deeply sorry for the loss with remembrance of him and his great achievement.

In Nov.29,2006
at the opening of the AsiaFlux Workshop 2006