

INTERNATIONAL GLACIOLOGICAL SOCIETY

**INTERNATIONAL WORKSHOP ON WORLD
GLACIER INVENTORY**

Lanzhou, China
September 21–24, 2008



CO-SPONSORED BY:

Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences (CAREERI, CAS) [The State Key Laboratory of Cryosphere Sciences, CAREERI, CAS]

World Glacier Monitoring Service (WGMS)

World Glacier Inventory (WGI)

Institute of Tibetan Plateau Research, Chinese Academy of Sciences (ITP, CAS)

Global Land Ice Measurements from Space (GLIMS)

National Natural Science Foundation of China (NSFC)

Chinese Academy of Science (CAS)

SECOND CIRCULAR

April 2008

INTERNATIONAL GLACIOLOGICAL SOCIETY

PRESIDENT: A. Ohmura

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IMMEDIATE PAST PRESIDENT: E.M. Morris

WORKSHOP ON WORLD GLACIER INVENTORY

The International Glaciological Society will hold an international workshop on World Glacier Inventory in 2008. The workshop will be held in Lanzhou, People's Republic of China, during 21–24 September (Sunday to Wednesday) in 2008. Registration will take place on Saturday 20 September.

WORKSHOP ORGANIZATION

Magnús Már Magnússon (International Glaciological Society).

SCIENTIFIC STEERING AND EDITORIAL COMMITTEE:

Atsumu Ohmura, Simon Ommanney, Roger Braithwaite, Bruce Raup, Wilfried Haeberli, Qin Dahe, Ding Yongjian, Liu Shiyin, Wang Ninglian

LOCAL ARRANGEMENTS COMMITTEE

Qin Dahe (Chair), Yao Tandong, Ding Yongjian, Ren Jiawen, Liu Shiyin, Wang Ninglian, Kang Ersi

INFORMATION ABOUT THE WORKSHOP MAY BE OBTAINED FROM:

International Glaciological Society, Scott Polar Research Institute,
Lensfield Rd, Cambridge CB2 1ER, UK.

Email: igsoc@igsoc.org

Tel: +[44] (0)1223 355 974 Fax: +[44] (0)1223 336 543

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IGS Web: <http://www.igsoc.org/symposia/>

Local website: <http://www.casnw.net/workshop/Workshop.html>

PARTICIPATION

This circular includes instructions for registration and for arranging accommodation. A registration form (available at the Workshop website) is also included. The registration and accompanying payment are due 15 July 2008. There is a surcharge for late registration. The participant's registration fee includes organization costs, a set of abstracts, coffee breaks and lunch.

REGISTRATION FEES

	£	US\$	€
Participant (IGS member)	190	375	245
Participant (not IGS member)	215	425	275
Student or retired IGS member	115	225	150
Accompanying person	115	225	150
Late registration surcharge (after 10 June 2008)	50	100	65
Workshop study tours:			

Please book before 1 July. Bookings will be done by fax to the Local Organizing Committee.

Registration refunds will be made according to date of notification. Cancellations made before 15 July 2008 will receive a full refund. Cancellations between 15 July and 1 September 2008 will receive a 50% refund. After 1 September it will not be possible to make any refund.

THEME

An effort to create an inventory of important features of glaciers on a global scale was launched as part of the International Hydrological Decade (1965–1974), resulting in the World Glacier Inventory (WGI). The main motivation was to obtain information on distribution of surface area and ice volume of glaciers. Initially, the aim was to compile an inventory of all glaciers outside the two ice sheets Greenland and Antarctica. It was also planned to repeat a similar effort after a few decades to detect changes in glaciers. To date about 37% of the estimated total glacier surface is inventoried in the WGI and made available through the World Glacier Monitoring Service (WGMS) in Zürich, Switzerland, and National Snow and Ice Data Center (NSIDC) in Boulder, USA. It was realized that the original inventory method using aerial photography, topographic maps and planimetry was too time consuming to keep up with the current rapid changes glaciers are experiencing, and many regions still lacked the information necessary for a detailed inventory. In the early 1980s first attempts were made to obtain glacier inventory data from satellite images. With the launch of Landsat 4 in 1982 (since 1984 replaced by Landsat 5) and the availability of 30 m resolution data from the Thematic Mapper (TM) sensor, automated mapping of glacier ice from multispectral bands became possible and related methods have been developed. The Global Land Ice Measurements from Space (GLIMS) initiative, begun in about 1995, is a global effort to apply these methods to build a new glacier inventory that contains, in addition to point locations, also full digital glacier outlines. The GLIMS archive currently contains information on approximately 39% of the estimated number of glaciers, or 27% by surface area. During the 40 years after launching the WGI and 20 years of glacier remote sensing work, both efforts have made substantial progress and contributed tremendously to our knowledge in glaciology and related sciences. Both inventories are, however, incomplete. The original and detailed inventory was completed by only 11 countries and one region, and some completed national inventories are not forwarded entirely to the world data centres. There are ongoing efforts to map global land ice cover at lower spatial resolution from satellite data, but higher resolution remote sensing-based inventories still leave approximately 70% of glacier area uncovered. There is now a significant overlap between the WGI and GLIMS inventory. This situation offers a chance to calculate glacier change through time, at least in regions where the originally used glacier boundaries are available to guarantee that the same entities are compared. Further, original and satellite-based methods have been successfully applied beyond the regions of the original concept, namely to Greenland and Antarctica, albeit for limited areas. A number of scientific works have been already accomplished by using inventoried data, often to calculate changes in hydrological basin discharge. The full potential of calculating glacier specific volumes from the topographic information stored in the WGI remains to be explored. In particular, the application of new technologies (GIS) combined with satellite-derived terrain models opens promising new perspectives. The combination with GCM provided scenarios on future climate change for improved assessment of global sea-level rise have only started to be discussed among related communities. The missing data in the WGI make the estimation of the global ice volume, a primary goal of the inventory effort, difficult. In the meantime the cryosphere itself is rapidly changing. It is thus of the utmost importance to complete a global inventory as soon as possible. Whether the data from the WGI and the GLIMS inventory could be combined or have to be completed separately, remains to be discussed. The proposed workshop is

thus not an occasion to present the inventoried contents. The workshop is intended to review and discuss what has been accomplished on a global scale, and to consider how the WGI and GLIMS data have been and will be applied, and what remains to be done to produce a complete global glacier inventory.

TOPICS

The suggested topics include:

- (1) Overview of the present status of glacier inventories based on the original (WGI) and satellite-based (GLIMS) methods.
- (2) Experiences of completion of national inventories: Ex-Soviet Union, China and Iceland (these are big owners of glaciers who completed the national inventories).
- (3) GLIMS and GlobGlacier status: Developments in methodology for an automated inventory; other glaciological remote sensing projects at NASA, ESA and other space agencies.
- (4) Challenges and results of comparing satellite-based inventories with the original WGI.
- (5) Present data availability at two main centres, NSIDC in Boulder and WGMS in Zürich.
- (6) Applications of WGI and GLIMS for glacier ice volume calculation, global sea-level change, hydrological cycle and water resources, energy planning and disaster monitoring; new ideas for other applications.
- (7) Strategy for completion of the World Glacier Inventory and GLIMS inventory.

SESSIONS AND POSTERS

The official language of the workshop is English. Oral presentations will be held on three full days and one half-day. There will be ample opportunity for poster displays. Poster boards measuring 900mm wide by 1200mm high (A0 portrait size) will be supplied for the poster presentations.

ABSTRACTS

(1) SUBMISSION OF ABSTRACTS

Participants who want to contribute to the Workshop should submit an abstract of their proposed presentation. This abstract must contain sufficient detail for its scientific merit and relevance to the Workshop theme to be judged by the Editorial Board. A website will be available from 1 May 2008 where authors can upload their abstract and all the relevant contact information. The abstract itself should not exceed 400 words. References and illustrations should not be included.

Those unable to submit their abstract via the internet can submit electronic files on a CD or diskette to the IGS office where a member of staff will upload them onto the website.

LAST DATE FOR RECEIPT OF ABSTRACTS: 10 JUNE 2008

(2) SELECTION OF ABSTRACTS

Each abstract will be assessed on its scientific quality and relevance to the Workshop theme. Authors whose abstracts are accepted will be invited to make either an oral or poster presentation at the Workshop. First or corresponding authors will be advised by 1 July 2008 of the acceptance or otherwise; other authors will not be informed separately. Authors who have not received notification by that date should contact the IGS office in Cambridge in case their abstract was not received. The abstracts will be compiled into a paper or CD format, and may be published on the Internet.

(3) DISTRIBUTION OF ABSTRACTS

A set of the accepted abstracts will be provided to participants upon registration on 20 September 2008.

THEMATIC PUBLICATION

The Council of the IGS has decided to change the editorial policy of the *Annals of Glaciology*. The *Annals* will be published as a thematic journal whose themes will be chosen by the IGS Council on a regular basis. Such themes may run parallel to the themes of symposia or may be independent. Thus the Council has decided to publish an *Annals* issue whose theme will be 'World Glacier Inventory'. Submissions are open to anyone. All papers should be submitted through the IGS online submission system and will be refereed and edited according to the Society's regular standards before being accepted for publication. Those submitting abstracts to the Workshop will be asked to indicate whether they intend to submit a paper for publication in the *Annals*, so that reviewers may be sought in advance. Papers submitted for consideration in the *Annals* cannot be submitted to another publication as well. The deadline for submitting papers to the *Annals* is 31 August.

The page charge policy for publishing in the *Annals of Glaciology* has not been finalized yet but that information will be made available as soon as possible.

EXCURSIONS AND SOCIAL PROGRAM

In honour of Professor Shi Yafeng's 90th birthday there will be a celebration in the morning of 25 September. Professor Shi is an Honorary Member of the International Glaciological Society. The leaders and distinguished guests will give speeches, and then there will be an Award Distribution Ceremony.

On the afternoon of Sep. 25, there will be the symposium of Shi Yafeng's Academic Thought. On the evening, we will visit the Yellow River. On Sep 26. and 27, there will be academic plenary presentations on glaciers and frozen ground.

An ICEBREAKER reception hosted by the State Key Laboratory of Cryosphere Science will be held on September 20 (Saturday evening).

BANQUET to be held at the Ningwozhuang Hotel, on Sunday evening, 21 September at a cost of RMB ¥200 per person.

For evening meals, there are several options that are left to the individual participants to explore. Two other buffet dinners will be provided at a price of RMB ¥270 per person. Remember that the banquet is separate. To attend the banquet and have the buffet dinners for the remainder of the week, tick both boxes on the Registration and Accommodation Request Form and make the payment at the Workshop front desk upon arrival. Of course, you can buy as many (or few) buffet tickets as you would like.

POST WORKSHOP STUDY TOURS:

Two separate study tours have been arranged. Please indicate which post-workshop study tour you would like to participate in before July 1.

- I. Tour to the No. 12 glacier (39° 26'N, 96° 33'E), a cold glacier in the northwest Qilian Mountains in the Gansu Province. The Dunhuang Mogao Grottos, a renowned historic site dating back to 366 AD, is within 100 miles to the west of the glacier -----4 days, RMB ¥1640 per person.
- II. Tour to the Hailuoguo glacier (29° 36'N, 101° 54'E), a temperate glacier on the east slope of Mt. Minya Konka in the western Sichuan Province. A permanent observational station near the glacier has been running for over 20 years. To the north of the Mount, the famous Tibetan town, Kangding is located ---- 6 days, RMB ¥2510 per person.

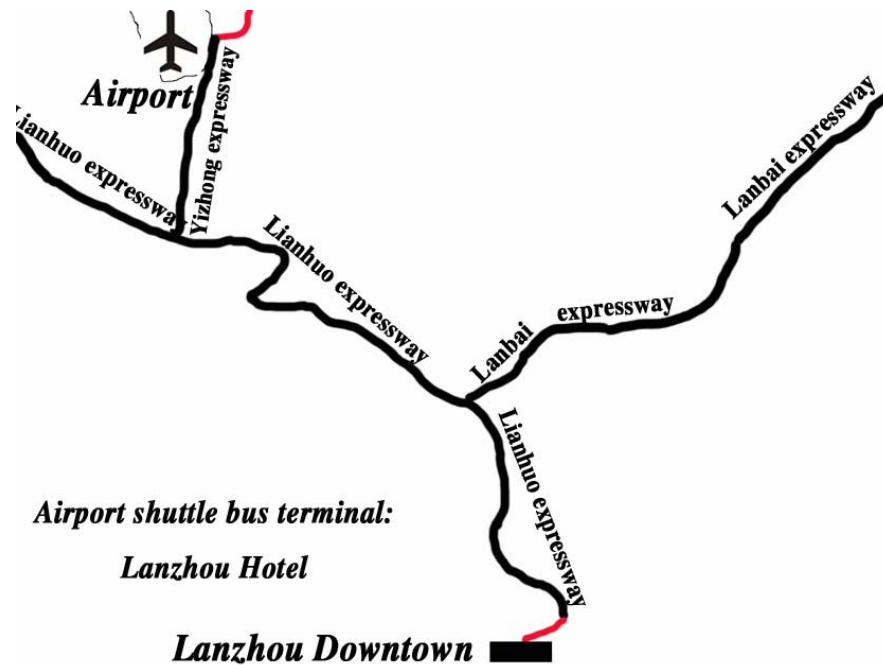
More details on the study tours can be found at the back of this circular.

Venue

The workshop will be held at the Ningwozhuang Hotel, Lanzhou, China

Getting to the Workshop venue

- **Zhongchuan Airport to the city of Lanzhou**



Route map from Zhongchuan Airport to Lanzhou downtown

请送我到民航大巴终点站----兰州饭店，
谢谢！

**Please take me to airport shuttle bus
terminal----Lanzhou Hotel. Thank you!**

请送我到宁卧庄宾馆，谢谢！

**Please take me to Ningwozhuang Hotel.
Thank you!**

请送我到民航大巴乘车处（兰州饭店西
侧民航售票处）

**Please take me to airport shuttle bus
stop. Thank you!**

In case you and your computer cannot read Chinese, we put the above figure for you to print and aid you to get to your destination. After you get off the air plane, you can give it to the driver, and he/she shall take you to the place where you want.

Airport Shuttle Bus

If you take the airport shuttle bus, please get off at the end of the route (named as Lanzhou Hotel). One-way price is at RMB ¥30, and there is the direct shuttle bus before/after every scheduled flight. It takes around 80 minutes to get to the shuttle bus terminal, downtown (Lanzhou Hotel).

Taxi

One-way price: about RMB ¥180.

—Time: around 1 hour

Sketch map of the hotels and the institute (CAREERI)



Accommodation Information

Suite room: two rooms with one bigger bed or two smaller beds

Double room: one room with two beds

Single room: one room with one bed

The price does not include breakfast, since it is the discounted rate.

Ningwozhuang Hotel

Address: Tianshui Road 366, Lanzhou, China

Phone: +86-931-8265-888, or +86-931-8416-221

Fax: +86-931-8417-639

—Website: <http://travel.mygongshe.com/hotel/hotel-0.htm>

Cost: Double room: RMB ¥ 480 (VIP building) or
RMB ¥ 380 (other buildings) per day per room

Lanzhou Hotel

Address: Donggang Western Road 486, Lanzhou, China

Phone: +86-931-8416-321, Fax: +86-931-8418-608.

Website: <http://www.lanzhouhotel.com/>

Cost: Suite room: RMB ¥ 680 or RMB ¥ 880 per day

Double room: RMB ¥ 280 per person per day in double occupancy or

RMB ¥ 480 per day per room for single occupancy

—Single room (big bed): RMB ¥ 280 per person per day

Jincheng Hotel

Address: Tianshui Mid Road 3, Lanzhou, China

Phone: +86-931-8416-638, or +86- 0-132-3931-3189,

or +86-931-3695-000, Fax: +86-931-8418-438

Website: <http://www.gsjcbg.com/>

Cost: Suite room: RMB ¥ 448 or RMB ¥ 468 per day

Double room: RMB ¥ 272 or RMB ¥ 298 per day per room – double occupancy

Single room (big bed): same as double room

Note: the current exchange rate between USD/RMB is around 7.01, and EUR/RMB is around 10.9.

VISA

If you need visa for coming to China, please provide high resolution scanned copy of your passport via e-mail (xieaih@lzb.ac.cn) before July 1. If you have problems getting a visa, please contact the Workshop secretariat.

Workshop website

Additional information and announcements will be posted on the Workshop website

<http://www.igsoc.org> or <http://www.casnw.net/workshop/Workshop.html> .

If you do not have access to the internet, please ask for information through Workshop secretariat directly (see above).

IMPORTANT DATES

Financial support request	10 June
Submission of abstract	10 June
Pre-registration deadline	15 June
Deadline for full refund	15 July
Deadline for refund	1 September
Notification of abstract acceptance to authors	1 July
Accommodation	1 July
Submission of Passport Copy	
for people who need VISA	1 July
Submission of post workshop study tours	1 July
Submission of paper	31 August
Preliminary Program on Workshop web site	10 September

Possible funding

Some very limited financial support for participants from developing countries and countries with economy in transition is being explored. Unfortunately it is restricted to only 10 participants. Please contact the local organizing committee directly via

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INTERNATIONAL WORKSHOP ON WORLD GLACIER INVENTORY

September 20-24, 2008, Lanzhou, China

Registration and Accommodation Request Form

Please fill out this registration form and send to igsoc@igsoc.org \ liusy@lzb.ac.cn \ xieaih@lzb.ac.cn by June 10, 2008 (Double click one of the boxes to tick it).

Please make copies of the registration form if you require an invitation for an accompanying person.

Given name:		Surname:	
Affiliation:			
Address:			
Country:			
Nationality:			
VISA for coming to China:	<input type="checkbox"/> Needed	<input type="checkbox"/> Not needed	
Email:			
Phone/Fax:			
Presentation	<input type="checkbox"/> Oral	<input type="checkbox"/> Poster	
Scientific topic			
Attend Banquet	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Need buffet dinner	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Attend Excursion	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Workshop study tours	No. 12 glacier	<input type="checkbox"/> Yes
	Hailuogou glacier	<input type="checkbox"/> Yes

Please specify the dates of check in and out if you want to book a room.

Date of check in	Date of check out	Any other date if any	Number of people

Which hotel and what type of room will you book?

Hotel	Type of Room	Cost (per day)

Special requests:

Abstract Submission Form

Please submit your abstract online through the IGS website. This is STRONGLY recommended.

If you have a limited access to the internet you can use the below form. Please complete this form for each presentation, and send it to igsoc@igsoc.org \ liusy@lzb.ac.cn \ xieaih@lzb.ac.cn by June 10, 2008. For those who would like to make more than one presentation, please copy this form (Double click one of the boxes to tick it).

<input type="checkbox"/> Oral presentation	<input type="checkbox"/> Poster presentation (A0 size)	<input type="checkbox"/> Either
Scientific topic		
Title of presentation		
Authors and their affiliations		
Abstract (300 words)		

Post Workshop Study Tours

Four-day Tour to No. 12 glacier and Dunhuang

Date	Days	Activities	Meals	Accommodation
25 Sep.	1st	Set out for Dunhuang by MU2416 at 22:35		Dunhuang International Hotel (****)
26 Sep.	2nd	Visit Lao-Hu Valley at Subei County by bus Visit No. 12 glacier Set out for Anxi after supper (180km)	B/L/D	Anxi Hotel(***)
27 Sep.	3rd	Visit Dunhuang Mogao Grottos (25km from hotel) Visit Sha-Zhou Castle (Movie City) Visit Ming-Sha Mountain and Moon-like Lake by camel (self pay for camel using)	B/L/D	Dunhuang International Hotel (****)
28 Sep.	4th	After breakfast, the tour bus takes the traveler to airport and the tour ends.	B	

Notes:

- Price: RMB ¥ 1640 (for more than 10 persons)
- If you need the single room, please pay more RMB ¥ 410 per person.
- The price doesn't include the air ticket from Lanzhou to Dunhuang and Dunhuang to other places (e.g. Beijing, Lanzhou etc.).

The price includes:

- Ticket for the first gate of scenic place
- Hotel
- Tour bus;
- Responsibility insurance
- Emergency insurance of tour
- 3 breakfast, 2 lunch and 2 dinner (8 dishes and 1 soup for lunch and dinner)
- Tour guide

Six-day Tour to Hailuogou glacier and Chengdu

Date	Days	Journey	Activities	Meals	Accommodation
26 Sep.	1st	Lanzhou ---- Chengdu	Set out for Chengdu by CA4210 10:00/11:20, and visit Wuhouci Temple and Jinli old street	L/D	Jindi Hotel or similar hotel (***)
27 Sep.	2nd	Chengdu ---- Kangding (7hs)	Visit Erlang Tunnel	B/L/D	Jinshan Hotel or similar hotel (***)
28 Sep.	3rd	Kangding ---- Hailuogou (106km, 2hs)	Visit Paoma mountain by (up and down) cable car	B/L/D	Changzheng Hotel or similar hotel (****)
29 Sep.	4th	Hailuogou Glacier	Visit Dabing icefall by cable car Visit the Glacier World of and hot spring in Camp 2 (RMB ¥ 60 per person)	B/L/D	Ge'ersa Hotel or similar hotel (***)
30 Sep.	5th	Hailuogou ---- Chengdu (356km, 7hs)	Moxi old town, Roman Catholicism Church, Chairman Mao Zedong Memorial, Camp 3 of Hailuogou glacier (including travel bus), Luding Bridge, Wenshu Temple, WenShu lane, and local opera performance ---- Face changing (RMB ¥ 120 per person)	B/L/D	Jindi Hotel or similar hotel (***)
1 Oct..	6th	Chendu	After breakfast, the tour bus takes the travelers to airport and the tour ends.	B	

Notes:

- Price: RMB ¥ 2510 (for more than 10 persons)
- If you need the single room, please pay more RMB ¥ 450 per person.
- The price doesn't include the air ticket from Lanzhou to Chengdu and Chengdu to other

places (e.g. Beijing, Lanzhou etc.).

- You can choose to visit the Panda base on September 6th, and you pay it yourself.

The price includes:

- Ticket for the first gate of scenic place
- Hotel
- Tour bus
- Tour guide
- Responsibility insurance
- Emergency insurance of tour
- 5 breakfast, 5 lunch and 5 dinner (8 dishes and 1 soup for lunch and dinner)

The following is the full price of air ticket from Dunhuang to other places, perhaps the price can be discounted then, but now it can't be sure. The detail time of each airplane can only be known after April 4.

Direction	Price (RMB ¥)
Lanzhou to Chengdu	1090
Lanzhou to Dunhuang	1300
Dunhuang to Beijing	1880
Dunhuang to Shanghai	2460
Dunhuang to Yinchuan	890
Dunhuang to Urumchi	710
Dunhuang to Chengdu	1540
Dunhuang to Xi'an	1680

In Chengdu airport, there are many more airplanes, we haven't listed here, please check it yourself on internet.