



### 3-d CADIP (Central Asian Deep Ice-coring Project) Workshop



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**Venue:**

Courtyard San Francisco Marriott Downtown, 299 Second Street, San Francisco, CA 94105, U.S.A.

Tel: (415) 947-0700 <http://courtyardsanfrancisco.com/>

Organized by Glacio-Climatic Group, University of Idaho

Vladimir Aizen Tel. (208) 596-0085 (M) E-mail: [aizen@uidaho.edu](mailto:aizen@uidaho.edu)

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## PREFACE

The Central Asia Deep Ice-coring Project has been designed as the international initiative for strengthening non-polar ice-coring research in central Asia. CADIP is coordinating scientists from U.S.A., Japan, Germany, Switzerland, France, China, Russia, Kyrgyzstan and Tajikistan who are planning ice-coring research in high Altai, Tien Shan, Pamir and Tibet mountains by sharing their expertise, field and laboratory analytical equipment, and research funds.

1<sup>st</sup> CADIP Meeting has been held on May 23-26, 2005 at the University of Maine, U.S.A. on May 23-26, 2005. Following this meeting, in July-August 2005, CADIP international team conducted successful reconnaissance in Tien Shan (Grigorieva ice-cap) and Pamir (Fedchenko Glacier) establishing new deep ice-coring sites, collected several shallow (10 to 20 m) snow-firn cores, measured Grigorieva ice-cap thickness, and assembled two automatic weather stations for year round observations at elevations of 4,600 m (Grigorieva ice-cap) and 5,420 m (Fedchenko Glacier). The shallow snow-firn cores from Tien Shan and Pamir were delivered frozen, processed and analyzed for major ions, trace elements and stable isotopes in the University of Maine and University of Idaho (U.S.A.), Nagoya University (Japan), Paul Scherer Institute (Switzerland) and University of Heidelberg (Germany) dedicated laboratories. First results from Pamir shallow cores recovered at elevation of 5,206 m and 5,365 m, published in *J. Glaciology* [*Aizen et al., 2008*], show the well-defined seasonal layering appearing in stable isotope and trace element distribution that identified the physical links controlling the climate and aerosol concentration signals.

During the 2-d CADIP Workshop in Nagoya University, Japan on January 27-30, 2006, the results from reconnaissance 2005, second year field trip to Tien Shan and Pamir in summer 2006, and deep drilling expedition to Tien Shan (Grigorieva ice-cap) in summer 2007 have been discussed. In August 2006, two small groups of researchers and students from the University of Idaho and Chiba University traveled to Tien Shan and Pamir to maintain automatic weather stations, download meteorological data recorded during 2005/2006, to collect 2005/2006 snow accumulation samples, and to conduct the second GPS survey for calculating the glacier Fedchenko surface velocity. The follow up deep ice-coring expedition to Tien Shan (Grigorieva ice-cap) in August-September 2007 recovered 98 m surface to bottom ice-core and finished three years automatic meteorological observation at the drilling site. The results of 2005, 2006 reconnaissance and preliminary results from the deep ice-core drilling expedition in Tien Shan in 2007 may be find at [www.sci.uidaho.edu/cae/projects/cadip/index.html](http://www.sci.uidaho.edu/cae/projects/cadip/index.html) of the University of Idaho.

Since the late 1990<sup>th</sup> beginning of 2000<sup>th</sup>, several deep ice-cores (including surface to bottom) were recovered in central Asia and stored in dedicated ice-core laboratories at the University of Maine, University of Idaho in U.S.A., and

at the Institute for Humanity and Nature in Kyoto, Japan. In summer 2008, a \$1M three years grant has been rewarded to the University of Maine and University of Idaho teams by NSF Paleo-Climatic Program. The AICA (Asian Ice Core Array) new project, in a frame of CADIP focuses on the processing, analyzing and interpreting six recovered in Tien Shan, Altai, and Tibet ice-cores and drilling the new 200 to 300 m experimental core at the Fedchenko Glacier snow-firn plateau in Pamir in 2009. The Pamir is a key region in the central Asian mountain system for studying atmosphere circulation dynamics and change in terrestrial systems of the mid-low latitudes. The established in 2005 Fedchenko Glacier drilling site may give an opportunity to recover 1,000 m surface to bottom ice-core that will have the longest non-polar ice-core climate environmental records ever recovered. However, the 1,000 m deep ice drilling on the Fedchenko Glacier will request cooperation in designing new deep alpine type of drill and significant funds for field logistics, ice-core transportation, laboratory processing and analysis. The expedition to Pamir in summer 2009 will gain new experience and details on necessary preparation for 1,000 m drilling. Logistics and problems of safety are also extremely important in the remote Pamir and should be considered very carefully.

The AICA funds for research in central Asia can give new impetus to CADIP and the development of complex long-term glaciological and meteorological monitoring in one of the Earth's largest alpine glacierized regions are in a frame of the GEWEX-CEOP High Elevation Project.

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## THE WORKSHOP AGENDA

### **December 12, 2008. Arrival day.**

Around 7-7:30 pm Sociable in SF downtown restaurant or pub.

### **December 13, 2008.**

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| 8:30 am         | Welcome, introduction, overall meeting objectives and means of long-term cooperation –<br>GEWEX CEOP-HE<br><span style="float: right;"><i>Vladimir Aizen</i></span>  |
| 8:45 am         | NSF AICA Project, goal and scientific questions, interconnection with other projects –<br>SCAR, IGBP, IPIC, ICARA<br><span style="float: right;"><i>Paul Mayewski</i></span>   |
| 9:00 am         | Results from two reconnaissance and one ice coring expedition in Central Tien Shan, Grigorieva Ice-cap in 2005, 2006 and 2007, status of 98 m ice core, ongoing processing, analysis and Interpretation, approaches<br><span style="float: right;"><i>Nozomu Takeuchi, Vladimir Aizen</i></span> |
| 9:20 am         | Results from Tien Shan (2000) and Altai (2003) ice-cores: Ongoing analysis, processing, and interpretation.<br><span style="float: right;"><i>Vladimir Aizen, Nozomu Takeuchi, Bjorn Grigholm</i></span>   |
| 9:40 am         | Results from Tibetan ice-cores, Geladaindong (2005), Nyianquentanglha (2003), and Mt. Everest: Ongoing analysis, processing, and interpretation.<br><span style="float: right;"><i>Bjorn Grigholm, Susan Kaspari, Paul Mayewski</i></span>   |
| 10:00 am        | Results from two reconnaissance in Central Pamir, Fedchenko Glacier in 2005 and 2006<br><span style="float: right;"><i>Vladimir Aizen, Arzhan Surazakov</i></span>   |
| <b>10:15 am</b> | <b>Coffee break</b>  |
| 10:30 am        | Existing ice-core processing and necessary type laboratory analyses, resolution: time table, necessary funds, cooperation and expected results – discussion<br><span style="float: right;"><i>Paul Mayewski – leading</i></span>   |

- 11:15 am Pamir, Fedchenko Glacier drilling expedition in summer 2009 or 2010? Goal, organization status, local logistics, research equipment people, expedition gears, transportation, necessary funds, cooperation – discussion *Vladimir Aizen –leading*
- 12:00 pm Lunch** (*will be served in the meeting room*)
- 1:00 pm Complex glaciological, meteorological and GPS and photo-grammetry research on the Fedchenko Glacier in 2009 and beyond in cooperation with CAIAG and under GEWEX CEOP-HE Program *Ludwig Broun*
- 1:30 pm Ice-core drill, ground penetration radar, observational tools: questions-answers – discussion *Andrei Kurbatov, Christoph Mayer, Gino Cassasa*
- 2:00 pm CAIAG, Ice-core freezer and ice-core processing laboratory, Inylchek HE Geophysical Observatory and possible cooperation in deep ice-coring research in Tien Shan *Helmut Echtler, Bolot Moldobekov*
- 2:30 pm Coffee break**
- 2:45 pm Time scale development: Data sharing, interpretation, presentation and publication policy. *Andrei Kurbatov*
- 3:00 pm GEWEX CEOP-HE, IGS, ??? International Conference 2011: “Alpine Ice-Cores - Paleo-Climatic and Environmental Reconstructions” in 2011. Meeting committee, location, sponsors ???:  
*Vladimir Aizen*
- 3:15 pm Round table: discussion, conclusions and memorandum *Paul Mayewski – leading*
- 5:30-6:00 pm End of Meeting
- 7:00 pm Dinner** (restaurant in Courtyard Marriott or San Francisco downtown)

## PARTICIPANTS

### CHINA

- Prof. Yao Tandong                      Director, Institute of Tibetan Plateau Research, 18, Shuangqing Rd., Beijing,  
P.O. Box 2871, Beijing, 100085, P.R. CHINA  
Tel: +86-10-6284 9309   Fax: +86-10-6284 9886  
E-mail: [tdyao@itpcas.ac.cn](mailto:tdyao@itpcas.ac.cn)
- Dr. Shichang Kang                      Institute of Tibetan Plateau Research, 18, Shuangqing Rd., Beijing,  
P.O. Box 2871, Beijing, 100085, P.R. CHINA  
Tel: +86-10-6284 9309   Fax: +86-10-6284 9886  
E-mail: [shichang.kang@itpcas.ac.cn](mailto:shichang.kang@itpcas.ac.cn)
- Dr. Daniel Joswiak                      Institute of Tibetan Plateau Research, 18, Shuangqing Rd., Beijing,  
P.O. Box 2871, Beijing, 100085, P.R. CHINA

Tel: +86-10-6284 9309 Fax: +86-10-6284 9886  
E-mail: [djoswiak@vandals.uidaho.edu](mailto:djoswiak@vandals.uidaho.edu)

## **CHILE**

Dr. Gino Cassasa Centro de Estudios Científicos, Arturo Prat 514, Valdivia, CHILE.  
Tel: (56) (63) 234500 E-mail: [gc@cecs.cl](mailto:gc@cecs.cl)

## **GERMANY**

Prof. Helmut Echtler Helmholtz-Zentrum Potsdam, Section 1.4 and Co-director CAIAG  
Telegrafenberg A 17, 10.01, D-14473 Potsdam, GERMANY  
Tel: +49-331-288-1314; Fax: +49-331-288-1111  
E-mail: [helle@gfz-potsdam.de](mailto:helle@gfz-potsdam.de)

Dr. Wasili Michajljow Helmholtz-Zentrum Potsdam, Section 1.4, Telegrafenberg A 17, 10.01, D-14473  
Potsdam, GERMANY  
Tel: +49 (331) 8 872-862  
E-mail: [wami@gfz-potsdam.de](mailto:wami@gfz-potsdam.de)

Prof. Ludwig Braun Chairman, Kommission für Glaziologie der Bayerischen Akademie der  
Wissenschaften, Marstallplatz 8, 80539, München, GERMANY  
Tel: +49 (1260) 892-3031 ext. 314  
E-mail: [Ludwig.Braun@lrz.badw-muenchen.de](mailto:Ludwig.Braun@lrz.badw-muenchen.de)

Dr. Christoph Mayer Kommission für Glaziologie der Bayerischen Akademie der  
Wissenschaften, Marstallplatz 8, 80539, München, GERMANY  
Tel: +49 (1260) 892-3031 ext. 314  
E-mail: [Christoph.Mayer@LRZ.badw.muenchen.de](mailto:Christoph.Mayer@LRZ.badw.muenchen.de)

## **FRANCE**

Prof. Jerome Chappellaz Deputy Director, Laboratoire de Glaciologie et Géophysique de l'Environnement,  
Domaine Universitaire, (UMR 5183) 54, rue Molière 38402 - Saint Martin d'Hères  
cedex FRANCE Tel: +33 (0)4 76824264 Fax: +33 476 824201  
E-mail: [jerome@lgge.obs.ujf-grenoble.fr](mailto:jerome@lgge.obs.ujf-grenoble.fr)

## **JAPAN**

Prof. Jumpei Kubota Research Institute for Humanity and Nature, 335 Takashima-cho, Kamigyo-ku,  
Kyoto 602-0878, JAPAN. Tel: +81(75) 229-6171; Fax: +81 (75) 229-6150  
E-mail: [jkubota@chikyu.ac.jp](mailto:jkubota@chikyu.ac.jp)

Prof. Nozomu Takeuchi Graduate School of Science and Technology, Chiba University, 1-33 Yayoi-cho,  
Inage-ku Chiba 263-8522, JAPAN. Tel: +81 (43) 290-2843; +81 (43) 290-2859  
E-mail: [ntakeuch@faculty.chiba-u.jp](mailto:ntakeuch@faculty.chiba-u.jp)

Prof. Koji Fujita Graduate School of Environmental Studies, Nagoya University  
F3-1(200), Chikusa-ku, Nagoya 464-8601, JAPAN  
Tel: +81-(0)52-789-3479 Fax: +81-(0)52-789-3436  
E-mail: [cozy@nagoya-u.jp](mailto:cozy@nagoya-u.jp)

Dr. Takayuki Miyake National Institute of Polar Research, 1-9-10 Kaga, Itabashi-ku, Tokyo 173-8515,

JAPAN. Tel +81-3-3962-5582  
Fax +81-3-3962-5719  
E-mail: [tmiyake@nipr.ac.jp](mailto:tmiyake@nipr.ac.jp)

## **KYRGYZSTAN**

Dr. Bolot Moldobekov Co-Director, CAIAG (Central Asia Institute for Applied Geosciences), 73/2  
Timura Frunze Str., Bishkek 720027, KYRGYZSTAN  
Tel:+996 312 555111 Fax:+996 312 555222  
E-mail: [caiag@caiag.kg](mailto:caiag@caiag.kg)

## **SWITZERLAND**

Dr. Margit Schwikowski Paul Scherrer Institut, Labor für Radio- und Umweltchemie  
CH-5232 Villigen PSI, SWITZERLAND. Tel: +41 (56) 310-4110  
Fax: +41 (56) 310-4435. E-mail: [margit.schwikowski@psi.ch](mailto:margit.schwikowski@psi.ch)

Dr. Hans-Arno Synal ETH, Institute for Partical Physics, HPK/H33 Schafmattstrasse 20 CH-8093 Zürich  
Phone+41 44 633 2027. Fax+41 44 633 1067  
E-Mail: [synal@phys.ethz.ch](mailto:synal@phys.ethz.ch)

Dr. Susan Kaspari Paul Scherrer Institut, Labor für Radio- und Umweltchemie  
CH-5232 Villigen PSI, SWITZERLAND.  
E-mail: [susan.kaspari@maine.edu](mailto:susan.kaspari@maine.edu)

## **USA**

Prof. Paul Mayewski Director, Climate Change Institute, University of Maine, Orono,  
Maine 04469,USA.  
Tel: +1 (207) 581-3019; Fax: +1 (207) 581-1203  
E-mail: [Paul.Mayewski@maine.edu](mailto:Paul.Mayewski@maine.edu)

Dr. Andrei Kurbatov Climate Change Institute, University of Maine, Orono, Maine 04469, USA.  
Tel: +1 (207) 581-2840; Fax: +1 (207) 581-1203  
E-mail: [akurbatov@maine.edu](mailto:akurbatov@maine.edu)

Dr. Karl Kreutz Climate Change Institute, University of Maine, Orono, Maine 04469 USA.  
Tel: +1 (207) 581-3011; Fax: +1 (207) 581-1203  
E-mail: [karl.kreutz@maine.edu](mailto:karl.kreutz@maine.edu)

Bjorn Grigholm Climate Change Institute, University of Maine, Orono, Maine 04469 USA.  
Tel: +1 (207) 991-2792 ; Fax: +1 (207) 581-1203  
E-mail: [bjorn.grigholm@maine.edu](mailto:bjorn.grigholm@maine.edu)

Prof. Vladimir Aizen Glacio-Climatic Group, College of Science, P.O. Box 443025, University of  
Idaho, Moscow, ID 83844, USA. Tel. +1 (208) 596-0085; Fax. +1 (208) 882-1321  
E-mail: [aizen@uidaho.edu](mailto:aizen@uidaho.edu)

Dr. Elena Aizen Glacio-Climatic Group, College of Science, P.O. Box 443025, University of  
Idaho, Moscow, ID 83844, USA. Tel. +1 (208) 596-9681; Fax. +1 (208) 882-1321  
E-mail: [eaizen@uidaho.edu](mailto:eaizen@uidaho.edu)

Dr. Arzhan Surazakov Glacio-Climatic Group, College of Science, P.O. Box 443025, University of  
Idaho, Moscow, ID 83844, USA. Tel. +1 (208) 882-0289; Fax. +1 (208) 885-2855  
E-mail: [arzhan@uidaho.edu](mailto:arzhan@uidaho.edu)



**Logistics:** conference room, LCD projector, extension cords, free wireless Internet