

FIRST "EXPERTS GROUP REVIEW," OF THE CONSORTIUM TO PROVIDE
LOCATION CALIBRATION OF 30 IMS STATIONS IN EASTERN ASIA

At Lamont, Seismology Seminar Room, February 15 and 16, 2001

The meeting will last all day Thursday, plus Friday morning.

9:00 – 9:15a

Introduction

9:15 – 9:45a

Crust and Upper Mantle *P*- and *S*-Wave Delay Times at Eurasian Seismic Stations

Bob Engdahl, University of Colorado

10:00 – 10:30a

Derivation and validation of SSSCs for IMS stations in North America

Paul Richards (LDEO) & **Mark Fisk** (Mission Research Corp.)

(Paul will describe the method that was used to obtain these SSSCs, Mark will describe the procedures for presenting the SSSCs and for judging their acceptability)

11:00 – 11:30a

Identification and Validation of Reference Events within the Area Regionally
Monitored by IMS Stations in Asia and North Africa

Bob Engdahl, University of Colorado

1:00 – 1:30p

Determining Earth Structure and Source Parameters from Regional Waveforms

Chuck Langston, Pennsylvania State University (now visiting Center for
Earthquake Research and Information, University of Memphis)

1:30 – 2:00p

Discussion of datasets now available to infer crustal/upper mantle structure of the
Semipalatinsk Test Site

Work of Khalturin/Rautian/Richards, Belyashov, Duan, ...

2:00 – 2:30p

Preliminary evaluation of explosion waveform archive for station BRVK, using
Soviet PNEs to obtain regional travel times

Won-Young Kim

2:30 – 3:00p

Status of various Ground Truth datasets available now or in the next two years, for the work of the consortium

DOE, CEB, EHB, CSE, ASEMSE, KNDC/NNCRK, Kyrgyzstan data (old and new), Baykal, other Russian datasets, Chinese datasets. Explosion lists with accurate information.

3:30 – 4:00p

The double-difference method for locating seismic events

David Schaff, Stanford University

4:00 – 4:30p

What do Quartz and Craton PNE data tell us about the observability of regional phases? What do they tell us about travel-times of regional phases?

What is the variability of travel times along these profiles?

Igor Morozov, University of Wyoming

4:30 – 5:00p

Parameterization of 3D Earth Models for Dynamic Ray Tracing, Seismogram Synthesis, and Travel Times to IMS Stations.

Vernon Cormier, University of Connecticut

Adjourn. Dinner@richards.2_Clinton_Avenue_South Nyack

Friday morning, 9 – 9:30p

Studies of earthquakes in India, Nepal, Pakistan, Tibet

Gene Ichinose & Chandan Saikia (URS Greiner)

Topics for discussion and resolution on Friday morning:

How should Soviet-era Deep Seismic Sounding information be merged with other information to obtain regionally-varying models for which 2D (and in some cases 3D) travel times can be calculated?

What subsets of GT events should we seek waveforms for?

Looking ahead: when should we schedule our first submission of a proposal to the CCB, and what specific activities are needed to complete that proposal?

Looking further ahead: what activities should initiate towards the study of the next sets of IMS stations for which we shall prepare SSSCs?

ASEMSE Altay-Sayan Experimental and Methodological Seismological Expedition (which operates a local network out of headquarters in Novosibirsk).

SSSC Source Specific Station Corrections. (For each of 30 IMS stations in Eastern Asia, our consortium is to provide travel time as a function of distance and azimuth for all the major regional phases, such as Pn, Pg, Sn, Lg, to enable location estimates to be made more accurately than at present. In practice, this travel time information will be provided as corrections to the standard travel times now in use, which are known as the IASPEI91 travel times.)

BRVK Code name of the station at Borovoye, Kazakhstan (which has operated digitally since 1965, which has a large and important archive, and which is now sending data to Lamont in near real time).

CCB Configuration Control Board (the group of individuals at the Center for Monitoring Research that evaluates SSSCs and other inputs that affect the operation of software at the International Data Center for the Comprehensive Test Ban Treaty Organization).

CEB Calibration Event Bulletin (a set of accurately-located seismic events, with supporting data on times of arrival of various seismic waves at stations of the IMS).

EHB Engdahl, van der Hilst, Buland (who relocated a large fraction of the seismic events reported by the International Seismological Center).

GT Ground Truth (often used as GT1 or GT5 or more generally GT_n , where it is understood that a seismic event of GT_n quality is an event whose actual location is known to within about n km).

IMS International Monitoring System (which operates seismographic stations, and other types of stations, to monitor seismicity all over the globe).

KNDC Kazakhstan National Data Center.

NNCRK National Nuclear Center of the Republic of Kazakhstan.

PNE Peaceful Nuclear Explosion (which, by definition agreed to in 1976, is a nuclear explosion taking place away from a declared nuclear weapons test site).