



INTERNATIONAL ATOMIC ENERGY AGENCY
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION
INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS
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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION



INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY

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SMR.648 - 30

SECOND AUTUMN WORKSHOP ON MATHEMATICAL ECOLOGY

(2 - 20 November 1992)

"Using Networks for Biological Information"

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Knoxville, TN 37996-1300
U.S.A.

These are preliminary lecture notes, intended only for distribution to participants.

INFORMATION ON VARIOUS COMPUTER NETS AND BULLETIN BOARDS

THE BIOSCI ELECTRONIC NEWSGROUP NETWORK INFORMATION SHEET

This is the BIOSCI information sheet for the Americas and Pacific Rim countries. If you are located in Europe or Central Asia, please request that version of the BIOSCI information sheet by sending e-mail to the Internet address:

biosci@net.bio.net.

Introduction

The BIOSCI newsgroup network was developed to allow easy worldwide communications between biological scientists who work on a variety of computer networks. By having distribution sites or "nodes" on each major network, BIOSCI allows its users to contact people around the world without having to learn a variety of computer addressing tricks. Any user can simply post a message to his/her regional BIOSCI node and copies of that message will be distributed automatically to all other subscribers on all of the participating networks, including the Internet, USENET, BITNET, EARN, NETNORTH, HEANET, and JANET.

E-mail Subscription Requests and other Information

If you need to receive BIOSCI messages by e-mail, please send all subscription requests, subscription cancellations, or any other questions about using BIOSCI to the Internet address

biosci@net.bio.net

As your request will be read by a human, there is no need for special syntax in your message. Simply select the newsgroups from the list below to which you would like to subscribe.

Please be sure to use the biosci address above and **DO NOT** request subscriptions by posting messages to the newsgroup mailing addresses. Posting to the newsgroup addresses sends copies of your request to hundreds of people around the world and wastes network resources.

PLEASE NOTE THAT IF YOU HAVE ACCESS TO USENET NEWS YOU DO NOT NEED AN E-MAIL SUBSCRIPTION!! Simply read and post to the newsgroups in the "bionet" newsgroup heirarchy using your USENET news software (e.g., readnews, rn, vnews, ANU-NEWS, postnews).

WE STRONGLY ENCOURAGE ALL INTERESTED USERS TO EXPLORE GETTING USENET NEWS SOFTWARE AT YOUR SITE. THE SOFTWARE IS IN THE PUBLIC DOMAIN, AND YOU WILL FIND IT MUCH MORE CONVENIENT THAN SUBSCRIBING TO NEWSGROUPS BY E-MAIL. Please consult your systems manager or contact biosci@net.bio.net for assistance if needed.

Canceling E-mail Subscriptions

If you have subscribed to a newsgroup and are now leaving an institution or changing your e-mail address, it is IMPERATIVE that you send a note to biosci@net.bio.net and cancel your subscription!

Non-existent addresses or overflowing mailboxes cause computer mail programs to send back "daemon" messages which might bother everybody on the newsgroup. We will immediately remove any address causing such a problem, but would prefer it if you would notify us in advance as a courtesy to the rest of the user community.

Interruption of E-mail Service

It is our policy to remove any address from our mailing lists which becomes inaccessible and causes mail to bounce back to the sender. This might happen to you if your local computer or network fails for a significant period of time. If you notice that you are no longer receiving BIOSCI postings, it may be because your address was removed for the above reason. It will be necessary for you to contact biosci@net.bio.net and resubscribe. Due to time limitations it is not possible for us to check back on troublesome addresses.

List of BIOSCI Newsgroups

NEWSGROUP NAME	TOPIC
AGEING	Discussions about ageing research
AGROFORESTRY	Discussions about agroforestry research
ARABIDOPSIS	Newsgroup for the Arabidopsis Genome Project
BIOFORUM	Discussions about biological topics for which there is not yet a dedicated newsgroup
BIOLOGICAL-INFORMATION-THEORY-AND-CHOWDER-SOCIETY	Applications of information theory to biology
BIONAUTS	Question/answer forum for help using electronic networks, locating e-mail addresses, etc.
BIONEWS **	General announcements of widespread interest to biologists
BIO-JOURNALS	Tables of Contents of biological journals
BIO-MATRIX	Applications of computers to biological databases
BIO-SOFTWARE	Information on software for the biological sciences
CHROMOSOME-22	Mapping and Sequencing of Human Chromosome 22
COMPUTATIONAL-BIOLOGY **	Mathematical and computer applications in biology
EMBL-DATABANK	Messages to and from the EMBL database staff
EMPLOYMENT	Job opportunities
GDB	Messages to and from the Genome Data Bank staff
GENBANK-BB	Messages to and from the GenBank database staff
GENETIC-LINKAGE	Newsgroup for genetic linkage analysis
HIV-MOLECULAR-BIOLOGY	Discussions about the molecular biology of HIV
HUMAN-GENOME-PROGRAM	NIH-sponsored newsgroup on human genome issues
IMMUNOLOGY	Discussions about research in immunology
METHODS-AND-REAGENTS	Requests for information and lab reagents
MOLECULAR-EVOLUTION	Discussions about research in molecular evolution
NEUROSCIENCE	Discussions about research in the neurosciences
PLANT-BIOLOGY	Discussions about research in plant biology
POPULATION-BIOLOGY	Discussions about research in population biology
PROTEIN-ANALYSIS	Discussions about research on proteins and messages for the PIR and SWISS-PROT databank staffs.
PROTEIN-CRYSTALLOGRAPHY	Discussion about crystallography of macromolecules and messages for the PDB staff
SCIENCE-RESOURCES	Information from/about scientific funding agencies
THEORETICAL-BIOLOGY	

WOMEN-IN-BIOLOGY

Discussions about issues concerning women biologists

** Note that newsgroups flagged with ** are moderated, i.e., postings are directed to a moderator (editor) who later forwards messages (possibly edited or condensed) to the newsgroup.

Posting Messages to Newsgroups

The lists below include the addresses for posting messages and also the names of the corresponding UNIX USENET newsgroups. Messages can either be posted into the USENET newsgroups using "postnews" or similar software or they can be submitted by electronic mail to the mailing addresses given below. In most cases, messages are posted directly to the newsgroups without editorial intervention.

USENET users who use the "postnews" or similar software on their local computer should be sure to set the message distribution to "world" or "bionet" or else your message may not be distributed beyond your local computer. USENET newsgroups are read using, e.g., the "readnews," "rn," or "vnews" software on UNIX systems. USENET news software is in the public domain and is available for most UNIX systems. A public domain USENET news software package named ANU-NEWS is also available for VAX/VMS systems. Your local BIOSCI node can point you towards acquiring the software for use on your computer system.

Those who use e-mail to post messages should send their mail to the following Internet addresses in the USA:

NEWGROUP NAME	Mailing Address
AGEING	ageing@net.bio.net
AGROFORESTRY	ag-forst@net.bio.net
ARABIDOPSIS	arab-gen@net.bio.net
BIOFORUM	bioforum@net.bio.net
BIO-INFORMATION-THEORY +	bio-info@net.bio.net
BIONAUTS	bio-naut@net.bio.net
BIONEWS **	bionews@net.bio.net
BIO-JOURNALS	bio-jrnl@net.bio.net
BIO-MATRIX	biomatrix@net.bio.net
BIO-SOFTWARE	bio-soft@net.bio.net
CHROMOSOME-22	chrom-22@net.bio.net
COMPUTATIONAL-BIOLOGY **	comp-bio@net.bio.net
EMBL-DATABANK	embl-db@net.bio.net
EMPLOYMENT	biojobs@net.bio.net
GDB	gdb@net.bio.net
GENBANK-BB	genbankb@net.bio.net
GENETIC-LINKAGE	gen-link@net.bio.net
HIV-MOLECULAR-BIOLOGY	hiv-biol@net.bio.net
HUMAN-GENOME-PROGRAM	gnome-pr@net.bio.net
IMMUNOLOGY	immuno@net.bio.net
METHODS-AND-REAGENTS	methods@net.bio.net
MOLECULAR-EVOLUTION	mol-evol@net.bio.net
NEUROSCIENCE	neur-sci@net.bio.net
PLANT-BIOLOGY	plantbio@net.bio.net
POPULATION-BIOLOGY	pop-bio@net.bio.net
PROTEIN-ANALYSIS	proteins@net.bio.net
PROTEIN-CRYSTALLOGRAPHY	xtal-log@net.bio.net
SCIENCE-RESOURCES	sci-res@net.bio.net
TROPICAL-BIOLOGY	trop-bio@net.bio.net
WOMEN-IN-BIOLOGY	womenbio@net.bio.net

+ full name is BIOLOGICAL-INFORMATION-THEORY-AND-CHOWDER-SOCIETY

** Note that newsgroups flagged with ** are moderated, i.e., postings are directed to a moderator (editor) who later forwards messages (possibly edited or condensed) to the newsgroup.

List of USENET newsgroups

BIOSCI messages are distributed on the following USENET newsgroups in the "bionet" hierarchy. Contents of the USENET newsgroups and the e-mail distributions listed above are the same, i.e., messages sent in by e-mail are also forwarded to USENET and messages posted to USENET newsgroups are also distributed to e-mail subscribers.

NEWGROUP NAME	USENET Newsgroup Name
AGEING	bionet.molbio.ageing
AGROFORESTRY	bionet.agroforestry
ARABIDOPSIS	bionet.genome.arabidopsis
BIOFORUM	bionet.general
BIO-INFORMATION-THEORY +	bionet.info-theory
BIONAUTS	bionet.users.addresses
BIONEWS **	bionet.announce
BIO-JOURNALS	bionet.journals.contents
BIO-MATRIX	bionet.molbio.bio-matrix
BIO-SOFTWARE	bionet.software
CHROMOSOME-22	bionet.genome.chrom22
COMPUTATIONAL-BIOLOGY **	bionet.biology.computational
EMBL-DATABANK	bionet.molbio.emblatabank
EMPLOYMENT	bionet.jobs
GDB	bionet.molbio.gdb
GENBANK-BB	bionet.molbio.genbank
GENETIC-LINKAGE	bionet.molbio.gene-linkage
HIV-MOLECULAR-BIOLOGY	bionet.molbio.hiv
HUMAN-GENOME-PROGRAM	bionet.molbio.genome-program
IMMUNOLOGY	bionet.immunology
METHODS-AND-REAGENTS	bionet.molbio.methods-reagents
MOLECULAR-EVOLUTION	bionet.molbio.evolution
NEUROSCIENCE	bionet.neuroscience
PLANT-BIOLOGY	bionet.plants
POPULATION-BIOLOGY	bionet.population-bio
PROTEIN-ANALYSIS	bionet.molbio.proteins
PROTEIN-CRYSTALLOGRAPHY	bionet.xtallography
SCIENCE-RESOURCES	bionet.sci-resources
TROPICAL-BIOLOGY	bionet.biology.tropical
WOMEN-IN-BIOLOGY	bionet.women-in-bio

+ full name is BIOLOGICAL-INFORMATION-THEORY-AND-CHOWDER-SOCIETY

** Note that newsgroups flagged with ** are moderated, i.e., postings are directed to a moderator (editor) who later forwards messages (possibly edited or condensed) to the newsgroup.

FURTHER QUESTIONS??? Please address them to biosci@net.bio.net.

ECOSYS-L

The ECOSYS-L mailing list is intended to provide a forum to discuss problems in the fields of ecosystem dynamics and management.

there should be discussed the current state of the art and future of standardization and documentation of mathematical descriptions for ecological processes.

ECOSYS-L can be used also as a forum to discuss results of the just started research project 'Analysis of existing models of nutrient-cycles in agro-ecosystems'. One of the main tasks of this project is, to build up a database of documentations of mathematical description of ecological processes (ECOBAS). Information can be requested from ECOBAS via E-mail. (We are interested to put through this project with a broad discussion with other researchers. Further information about this project can be requested from Joachim Benz <benz@gf.de>.)

list-header:

* ECOSYS-L Liste fuer 'ecosystem theory and modelling'

* Review- Public Subscription- By owner Send- Public
* Notify- Yes Reply-to- List, Respect Files- Yes
* Validate- All commands Notebook- Yes, B, Monthly
* Mail-via- Dist2 Errors-To- Owners
* Renewal- NONE Ack - Yes

* Owner- lupolbenz@cony.GSF.DE (Joachim Benz)
* Owner- benz@cony.GSF.DE (Joachim Benz)
* Owner- benz@CONY.GSF.DE (Joachim Benz)

* This mailing list is intended for the discussion in the field of ecosystem theory and modelling. Typically the material will be question-and-answer, where someone wants information on any problem in this field. In addition contributions

* - to build up a list of mathematical models,
* - to build up an address-list of scientists, who are engaged in modelling and
* - to standardization of mathematical formulation of ecological processes

* are welcomed.

To subscribe, send the following command to LISTSERV@DEARN (bitnet) or LISTSERV@vm.gmd.de (in the BODY of e-mail):

SUBSCRIBE ECOSYS-L firstname lastname

After subscribing, messages may be sent to the list by sending to: ECOSYS-L@DEARN (bitnet) or ECOSYS-L@vm.gmd.de.

Owner: Joachim Benz <benz@gf.de>

If you question about how to use the list, or suggestions for new uses, please feel free to contact me.

Sincerely,

Joachim Benz

The following information about the CONSLINK bulletin board may be of interest to members of the ESA:

The CONSLINK Bulletin Board contains the following files that you can download to your system at any time.

CONSLINK MEETINGS	Schedules of conferences, seminars, workshops
CONSLINK NGOS	Register of NGOs active in conservation
CONSLINK FIELDSTA	Register of tropical field stations
CONSLINK REF-1	Conservation related references 1
CONSLINK REF-2	" " " 2
CONSLINK REF-3	" " " 3
CONSLINK INDO-MAL	Indo-Malaysian Interest Group
Newsletter	
CONSLINK B-C-NEWS	Biological Conservation Newsletter
CONSLINK BCN-1-92	previous 1992 BCNs
CONSLINK CBSG-1	IUCN Captive Breeding Specialist Group
Newsletter	
CONSLINK CBSG-2	IUCN " " " "
CONSLINK RFN-BULL	Rainforest Network News

In addition to the above files there are monthly logs of all CONSLINK messages posted since January 1991. An updated list of all files on the CONSLINK Bulletin Board you can receive by sending a message to LISTSERV@SIVM.BITNET which contains only the one line:

GET CONSLINK FILELIST

To download any of the above files and/or the ones listed in the filelist, send a message to LISTSERV@SIVM.BITNET which contains

one line for each file you want to download, e.g.

GET CONSLINK B-C-NEWS

GET CONSLINK CBSG-1

GET CONSLINK CBSG-2

To subscribe to the CONSLINK list, send the message
subscribe conslink YOUR NAME
to the address
listserv@sivm.bitnet

BIODIV-L is a listserv list based in Brazil, devoted to topics relevant to biodiversity. To subscribe, send the message
subscribe biodiv-1 YOUR NAME
to the address
listserv@bdt.ftpt.ansp.br

To get an idea of the sort of topics discussed, send the message
get biodiv-1 readme.first
to the address
listserv@bdt.ftpt.ansp.br

The intention of this list is to discuss technical opportunities, administrative and economic issues, practical limitations and scientific goals, leading to recommendations for the establishment of a biodiversity network.

Individual contributions are requested, not only as to network capabilities, but also as to existing databases of interest to biodiversity.

ite: Wed, 15 Jan 92 17:25:00 -0500
 bject: Introduction to SMBnet

is my pleasure to forward the maiden edition of the SMB Digest.
 r intent is to provide a necessary service to the mathematical biology
 munity at large. As such, the active participation of the members will
 required to be successful. Email pertinent items to
 mbnet@fconvx.ncifcrf.gov. These will be disseminated to subscribers in a
 mely manner (initially about once a month; more frequently as demanded).

onymous FTP will be available for the exchange of files, including
 e-prints in various formats as noted by Alan Perelson above. To obtain
 structions for the use of this service download the INFO file as follows:

```
ftp fconvx@ncifcrf.gov or ftp 129.43.52.4
Name: anonymous
Password: <your_email_address>
cd smb/pubs
get INFO
bye
```

ollow the instructions that appear there. For example, publications and
 ick issues of the SMB Digest may be downloaded from directory smb/pubs.

st regards,
 y Mejia

missions for SMB Digest:
 Mail to smbnet@fconvx.ncifcrf.gov

information about SMBnet:
 Send mail to listserv@fconvx.ncifcrf.gov with "help" in the body of mail.
 For example:
 echo help | mail listserv@fconvx.ncifcrf.gov
 onymous ftp repository: fconvx.ncifcrf.gov (129.43.52.4)

en you wish to receive your SMB Digest at a new email address, please
 subscribe at the old address. To do so, send email to
 listserv@fconvx.ncifcrf.gov from the old address with "unsubscribe
 mbnet" in the body of the mail. From a UNIX system this may be done
 follows:

```
ho "unsubscribe smbnet" | mail listserv@fconvx.ncifcrf.gov

subscribe please send email from the address where you wish to receive
il to listserv@fconvx.ncifcrf.gov with "subscribe smbnet your_personal_name"
the body of the mail. From a UNIX system do:
```

```
ho "subscribe smbnet your_personal_name" | mail listserv@fconvx.ncifcrf.gov
```

this manner the listserver obtains your email address most reliably.

not send me email asking that I subscribe/unsubscribe you. There is
 o much room for error! Do not send email to
 mbnet@fconvx.ncifcrf.gov asking to subscribe/unsubscribe. That
 dress is for items submitted to the Digest only. As you know, we are
 ers of a very busy computer center and network, so we most avoid
 traneous traffic.
 ny thanks,
 y Mejia

 Your subscription to list ECOLOG-L (Ecological Society of America: grants,
 bs, news) has been accepted.

Welcome to ECOLOG-L, a LISTSERV list maintained for members of the
 Ecological Society of America by David Inouye at the University of Maryland.
 This list is for distribution and archiving of information of interest to ESA
 members, such as job listings, funding opportunities, and ESA news. It can also
 be used to distribute requests for and information, as a forum for discussion
 of topics of interest to ESA members.

Since you succeeded in subscribing to the list, you must have at least
 some facility with electronic mail. You may want to take advantage of the
 network provided by subscribers to ECOLOG-L to pass on information, requests, or
 to start a dialogue on a topic such as a recent paper or political event. To do
 this, send your messages to the list (ECOLOG-L@UMDD.UMD.EDU), not to the list
 server where you sent your subscription message. Please provide a brief
 description of your message in the subject line.

To take advantage of the other capabilities of this list you may want to
 use some of the commands listed below. To use these commands, send them to the
 list server (i.e., computer) LISTSERV@UMDD.UMD.EDU (which is the address where
 you sent your subscription request). If you send the commands to the list
 (ECOLOG-L@UMDD.UMD.EDU), not only will the commands not take effect, they will
 be distributed to all list members (who will then make fun of your lack of
 facility with e-mail!).

To unsubscribe from this list (for this and other commands you can also
 use lower case letters if you want):

SIGNOFF ECOLOG-L

To eliminate the second message you get acknowledging a message to the list:

SET ECOLOG-L NOACK

This list also has files. There are files for job opportunities, funding
 opportunities, and ESA news. Other files may be added in the future. You can
 download a copy of a file, ask to have the file sent to you each time it is
 changed, or ask to be notified when it is changed (you could then get a copy if
 you wanted it). Commands for these actions are:

To find out what are the current files maintained on ECOLOG-L:

SENDME ECOLOG-L FILELIST

To get a copy of a file:

GET <filename> <filetype> ECOLOG-L

For example, to get the file JOBS, send the message:

GET JOBS JOB_LST ECOLOG-L

To get the file GRANTS, send the message:

GET GRANTS GRANTS ECOLOG-L

To get the file ESA_NEWS, send the message:

GET NEWS ESA_NEWS ECOLOG-L

The information <filename> <filetype> can be obtained by using the

REVIEW ECOLOG-L FILELIST command described above.

To have copies of files sent automatically when they are updated:

AFD ADD <filename> <filetype> ECOLOG-L

For example, for automatic copies of the updated jobs file,

send the message:

AFD ADD JOBS JOB_LST ECOLOG-L

To take yourself off this list, send the message:

AFD DEL JOBS JOB_LST ECOLOG-L

To receive notification, but not the file, when it is updated:

FUI ADD <filename> <filetype> ECOLOG-L

To stop notification, send the message:

FUI DEL <filename> <filetype> ECOLOG-L

If you have information that you want added to one of these files, you cannot do it yourself. You will have to send the information to me (DIS@UMAIL.UMD.EDU), as list manager. One reason for adding the information to the file, rather than just distributing it via the list, is that some people who are not members of the list may occasionally get copies of the files to look for new jobs, funding opportunities, etc.

If you question about how to use the list, or suggestions for new uses, please feel free to contact me.

David Inoué Department of Zoology University of Maryland DIS@UMAIL.UMD.EDU

NETLIB

Netlib is a library that contains software packages. For example it contains packages for finding eigenvalues and eigenvectors, solving initial value problems for stiff and nonstiff systems, solving linear systems, minimization using least squares etc. It is accessible from any UNIX system.

To get any of the packages in netlib you have to go through the following process (only the first time you are using this library):

- 1) ftp anonymously cs.utk.edu
- 2) change directory to pub/xnetlib
- 3) get the file xnetlib3.0.shar.2
- 4) exit ftp
- 5) uncompress xnetlib3.0.shar.2
- 6) sh xnetlib3.0.shar
- 7) command 6) will create a directory called xnetlib3.0, change to this directory and type
- 8) make netlibget

now you are ready to get any file from netlib, for example if you type :

netlibget netlib.ornl.gov index

the above command will put in your directory the index of all packages that are in netlib

netlibget netlib.ornl.gov index lapack

the above command will put in your directory the index

of routines in lapack

netlibget netlib.ornl.gov lmdif1.f minpack

the above command will put in your directory the package lmdif1.f from minpack which a least squar minimization package.
