Task & Data Analysis

Name of Dataset: PRE24____.bin; TERRAIN__.bin
Date: 02. 03. 2006, 10:07; 02. 03. 2006, 09:52
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This template is for TaDa analysis of scientific datasets in the SonEnvir project. It is based on the work of Stephen Barrass ("Auditory Information Design", PhD thesis, 1997). For further information read chapter 4 "TaDa: Task and Data analysis of information requirements".

File: PRE24____.bin; TERRAIN__.bin, read.f90
Format: binary data

PRE24____.bin: 24h precipitation data [mm/day] over the European alpine region (latitude 49.5°N-43°N, longitude 4°E-18°E; Grid points: 78 x 108). Time range: 11 years (1980-1990; 4018 days). The data is stored in 4018 arrays (one after another) of 78 x 108 (rows x colums) values. The 1st array contains precipitation data over the selected geographic region of day 1 (1.1.1980), the 2nd array contains precipitation data over the selected geographic region of day 2 (2.1.1980), and so on.

TERRAIN__.bin: Associated information on orography of the European alpine region (Terrain elevation [m]). Data is stored in one 78 x 108 array.

read.f90: This is a FORTRAN90 routine to read the data. Compile with "f90 read.f90 –o read". Execute with "./read xdim ydim tdim filename.bin". In the case of PRE24____.bin, xdim=78, ydim=108, tdim=4018. For TERRAIN__.bin, tdim=1.

The *.ctl files contain short information on data format of the homonymous*.bin files.

Scenario

The Story:
24h precipitation (= total precipitation within 6:00 UTC – 6:00 UTC of the next day) over the European alpine region (see above) from 01.01.1980 – 01.01.1991. Additionally, associated orographic information is delivered. Such data is of value for climate physics.

The Keys:
Question:
1. Is it possible to hear all 3 dimensions (geographical distribution & time) simultaneously and to have meaningful information on distribution of precipitation in space and time?
2. Perhaps, we can create the "sound of rain", which you can listen to in order to relax.
Answers: What are the possible answers to this question?
Subject: What is the subject?
Sounds: Which sounds could be associated (this is most often empty)?

TaDa

The Task:
Generic question:
Local Questions subject {it} (e.g. what ist it?, where is it? etc.)
Intermediate Questions subject {they, which, what} (e.g. where are they?, which is more?)
Global Questions subject {anything, everything} (e.g. whats going on?, is everything ok?)

Purpose:
What for?
One of 1. analyse, compare, navigate; 2. relax.
Ad 1.: Things you can investigate: e.g. 10-year mean precipitation in the seasons, variability of

precipitation (via std. deviations; do neighbouring regions swing together/against each other?), identification of regions with same characteristics (via covariances; do different regions sound different?), extreme values (does the rain fall regularly, or are there long droughts in some regions?), correlations in height (does precipitation behave similar in same orographic heights?), distribution (on how many days the precipitation is more than 20mm, 19 mm, 18mm etc?)
Ad 2.: "sound of rain".

Mode: Attention needed.
One of 1. interactive (?), 2. background.

Type: Temporal type of task. One of discrete/procedural.

Style: Style of information processing task. One of 1. exploration, 2. presentation.

The Information:
Level: Concerning single elements, groups or the elements as a whole.
 One of {local, intermediate, global}

Reading: Level of metaphors regarding the necessisity of learning.
One of {direct, conventional}

Type: One of {none, boolean, nominal, ordinal, ordinal-with-zero, ordinal-bilateral, interval, ratio, unknown}

Range: Possible range of information

Organisation: One of {category, time, location, alphabet, continuum}

The Data:
Type: One nominal.

Range: Possible range of data: ~0-20 mm/d

Organisation: One of time, location.