14. June 2002, 6th Kovacs Colloquium, UNESCO, Paris, France

Some think pieces on theme 8, transfer of knowledg information and technology”

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Successes of the 5th phase

- Networking different activities/programms: IHP, World Bank, ETNET, WET, WMO ….
- Organization of meetings
- Use of the internet as platform
- GOUTTE of water
- IHE, Delft
- Etc.

What is the major problem today?

.... saving money!

Major problem today:
Decline of the monitoring network!

- Beside teaching data analysis tools, educate how to measure precisely
- Where and how to build a gauging station?
- How to measure meteorological variables? ($\Rightarrow$ WMO Guidelines)
- Address the importance of data

Course structure:

Different environments require different methods

Austrian Alpes: Very humid

Palestine: Semi-ari

Subsurface storm flow

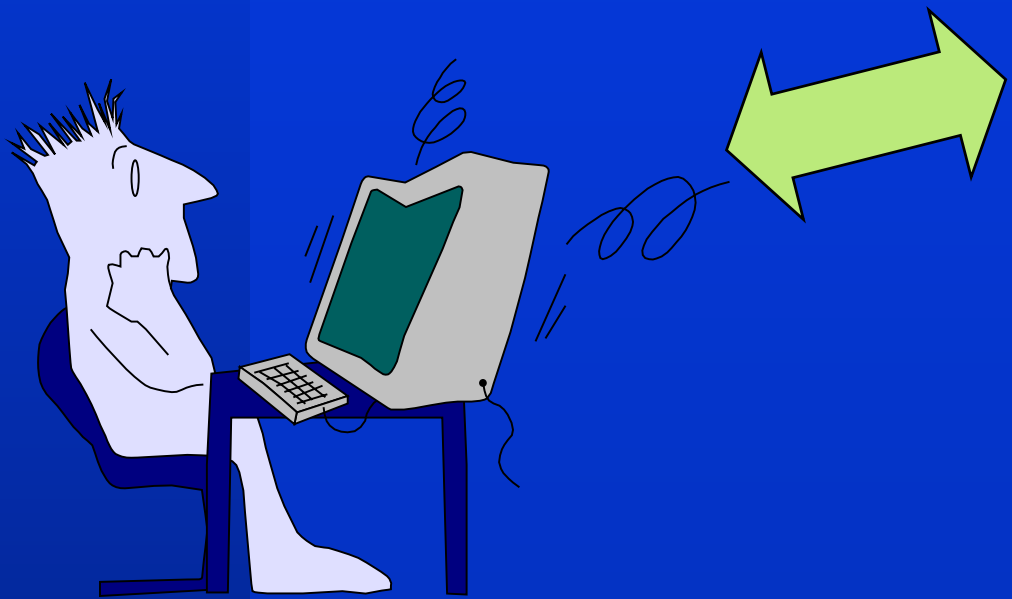
Horton Overland Flow

E-learning, computer aided learning: The solution?

- ☺ Flexibility
- ☺ Interactive learning
- ☺ Attractivity, fun, international contacts
- ☺ Links to important sites with data, tools etc.
- ☺ Translation into other languages
- ☺ Etc.

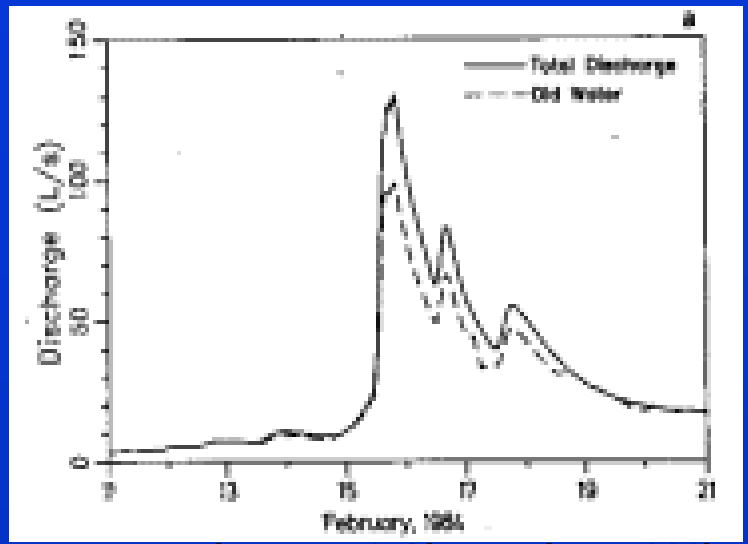
- ☹ Only ca. 25 % of the world have access
- ☹ Costly and time consuming
- ☹ Often (only) sophisticated tools
- ☹ Danger of creating “cyber-hydrologists”

What is the problem with *cyber-hydrologists*?



State-of-the-art ≠ state-of-the-practice

1. Contribution of pre-event water (often groundwater) during floods



(Hooper & Shoemaker, 1986)

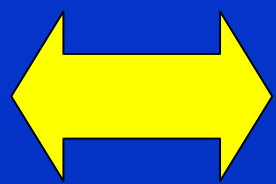
2. Educate the availability of new data sources (e.g. remote sensing, isotopes (GNIP) etc.)
3. But, do not follow every fashion (e.g. ANN etc.)

Further comments

- Do not forget about the shortcomings of modelling approaches
  - Process representation in a model
  - Use of averaged parameters for non-linear processes
  - Uncertainties
  - Etc.
- Feedback: cont. evaluation of the courses
  - Provide evaluation forms
  - Include all stakeholders

Further comments

- Importance of international organizations
  - IHP, FRIEND, HELP, JIIHP etc.
- In hydrology holistic approaches are needed, teach interfaces:



Modeller

Experimentalist

Concluding remarks

- Data!
- Feedback
- Suitable course, modular structure
- e-learning ?!
- Importance of holistic, inter-disciplinary approaches

➡ Hydrologist should be the integrator!