Earth observation Schoollab at the European Academy in Bolzano/Italy

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5 Research areas

• Linguistics
• Minorities and autonomies
• Sustainable Development
  • Institute for Applied Remote Sensing
• Management
• Life science
+ Service departments

➢ EURAC junior
Tradition in Science Communication

Science Festivals:
Explora 2002
Mini Explora 2005

“Young Scientists wanted”
2003/2005/2008
Pilote Project

EURAC

Schools

Interface

EURAC junior

EURAC research
Our motivation is...

to extinguish preconceptions about science,
to motivate kids,
to foster curiosity,
to communicate science and...
... promote a lifelong learning
**PROGRAMM & ÜBUNGEN**

**Inhalt**

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<th>Uhrzeit</th>
<th>Programm</th>
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<td>08:15 - 08:25</td>
<td>Begrüßung</td>
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<td>08:25 - 08:40</td>
<td>Übung A: Messung der GPS-Werte in Google Earth</td>
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<td>08:40 - 09:00</td>
<td>Präsentation: Was ist die Referenzellipsoid?</td>
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<td>09:00 - 10:20</td>
<td>Pause</td>
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<td>10:20 - 11:45</td>
<td>Übung B: Klassifizierung von Landnutzung am Beispiel Tal</td>
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<td>11:45 - 12:00</td>
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*Beteiligte EURAC Mitarbeiter und Mitarbeiterinnen*

Uta Pintsch, Philipp Riesner, Thomas Schillingberger
Target groups

Preschool  Primary school  Middle school  High school

and teachers
Methodological mixture

Ice breaker: hands on activities

Classical Lectures

Individual exercises with help from tutors

Collaborative learning
Introduction

Institute for Applied Remote Sensing
Ice breaker: hands on activity

then link practice with theory...

Google Earth
Treasure hunt

- Two teams get GPS-devices
- The footrace starts
- In the treasure they find satellite images and other materials
Background lecture on remote sensing

Physical background

Technical insights

Different satellite systems

Coordinate systems

GPS
Exercises with LEO works
Change detection

- Import of the data
- Combination of the channels
- Interpretation of the data
Exercises with LEO works

Change detection

Red channel 2000

Green channel 1990

Blue channel 1990

Red

Green

Blue

Red: new
White: no change
Turquoise: gone
Interpretation of the satellite image

- Picture from 20.3.2003
- Use of thermal channel of Landsat TM
- Valleys are hotter than the peaks
Exercises with LEO works
Alpine transit routes

• work in groups
• autonomous work with the help of tutors
• evaluation of the results
Exercises with LEO works
Land use classification

- Differences true color/color infrared
- Unsupervised classification
- Supervised classification
Crisis region in the Middle East

- Evaluation of the damage
- Determination of routes for evacuations
- Supervision of areas in quarantine
- Identification of safe areas
- Identification of areas for waste and dangerous items
• introduction lecture
• assignment of the correct time and seasonal date
• collaborative work
• solution
Earth from Space
Festival for kids
Our experience so far: 200 pupils
30 teachers
8 schools
from 4 locations
+ one festival for pre-school children

... and results from questioners ...
How do you validate the school lab?

- Very good: 50
- Good: 40
- Poor: 5
- Very poor: 0
I have learned a lot during this workshop

The covered topics are important for my future

The language used was understandable for me.

I would recommend the school lab
How was the state of knowledge before the schoolab?

How is your state of knowledge after the schoolab?
We want to ...

- specify our offers
- ad our offers to more schools and more pupils
- create a work relationship between students and researchers
- continue with teachers training
- collaborate with national and international partners.
Thank you for your attention!