



evropský  
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EVROPSKÁ UNIE



MINISTERSTVO ŠKOLSTVÍ,  
MLÁDEŽE A TĚLDVÝCHOVY



OP Vzdělávání  
pro konkurenceschopnost

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

## THIRD HYDAP WORKSHOP

on landscape energetic and thermography

ENKI, o.p.s., Třeboň, Czech Republic

3. – 6. 9. 2013

Dear partners,

let us invite you to the third HyDaP Workshop. The workshop will be held at ENKI o.p.s. v Třeboni (Dukelská 145, [Map](#))

Within the workshop, you are primarily invited to the lectures and practical training in “Landscape energetic and thermography” delivered by the research workers from ENKI o.p.s. (doc. Jan Pokorný, ing. Vladimír Jirka, dr. Petra Hesslerová) and from the University of South Bohemia in České Budějovice (ing. Jakub Brom, ing. Václav Nedbal at al.).

Both the workshop and panel will be held in English/Czech.

If interested, please register via the [Doodle](#) where you select the accommodation and meals. Any **additional requirements for meals** (vegetarian) and **accommodations** please send to an e-mail [hesslerova@enki.cz](mailto:hesslerova@enki.cz).

Accommodation is provided in an ENKI building, in two or triple rooms, some with shared facilities in the corridor. Please, in requirements for accommodation specify whether you are not bothered with modest accommodation, or with whom you are willing to share a room. In acute requirement for a single room, we will try to book this in the city.

Please, take your **own notebooks**.

The expenses on accommodation and refreshment during the workshop will be covered by the CVGZ.

Both application and requirements please send by **25.8.2013**. The workshop is opened for 20 participants.

We are looking forward to meeting you

On behalf on organization committee  
Petra Hesslerová

## **Programme**

### **September 3 (13:00 – 17:30)**

13:00 – 13:45 Workshop opening and introduction (P. Hesslerová, F. Zemek)

13:45 – 15:30 host lecturer - Siri Jodha Khalsa

- ASTER TIR data products and applications
- Overview of new satellite missions with TIR capabilities.

15:30 – 16:00 coffee break

16:00 – 17:30 Energy balance – Introduction (J. Brom)

- Radiation balance – solar radiation in atmosphere and at Earth surface, SW and LW radiation balance, albedo
- Heat balance – energy balance equation, latent, sensible and ground heat flux, factors affecting heat balance
- Case studies (J. Brom, V. Nedbal, P. Síčová ...) – if time remains

### **September 4 ( 9:00 – 17:30)**

9:00 – 11:30

Principles of thermal scanning, basics of thermography (V. Jirka)

- Theory
- Contactless measurement of temperature – pyrometers, thermovision cameras

11:30 – 12:30 First insights into thermal hyperspectral imaging (M. Pivovarník)

13:00 – 14:00 lunch

14:30 – 17:30 Field exercise (V. Jirka)

- Field exercise with thermal camera, a mobile pole equipped with meteo and radiation instruments – in Domanín
- Thermogram analysis and interpretation

### **September 5 (9:00 – 17:30)**

9:00 – 12:45 satellite data calibration (Siri Jodha Khalsa)

13:00 – 14:00 lunch

14:00 – 17:30 Energy balance calculation (J. Brom et al.) Part 1

- Methods of energy balance computing
- Bowen ratio method – energy balance calculation from meteo data

### **September 6 (9:00 – 14:00)**

9:00 – 12:45 Energy balance calculation (J. Brom et al.) Part 2

- Methods of energy fluxes computing from satellite and aerial data

13:00 – 14:00 lunch, discussion - future collaboration on papers and projects, conclusions