Plans for dynamical downscaling of ERA40 at HMS

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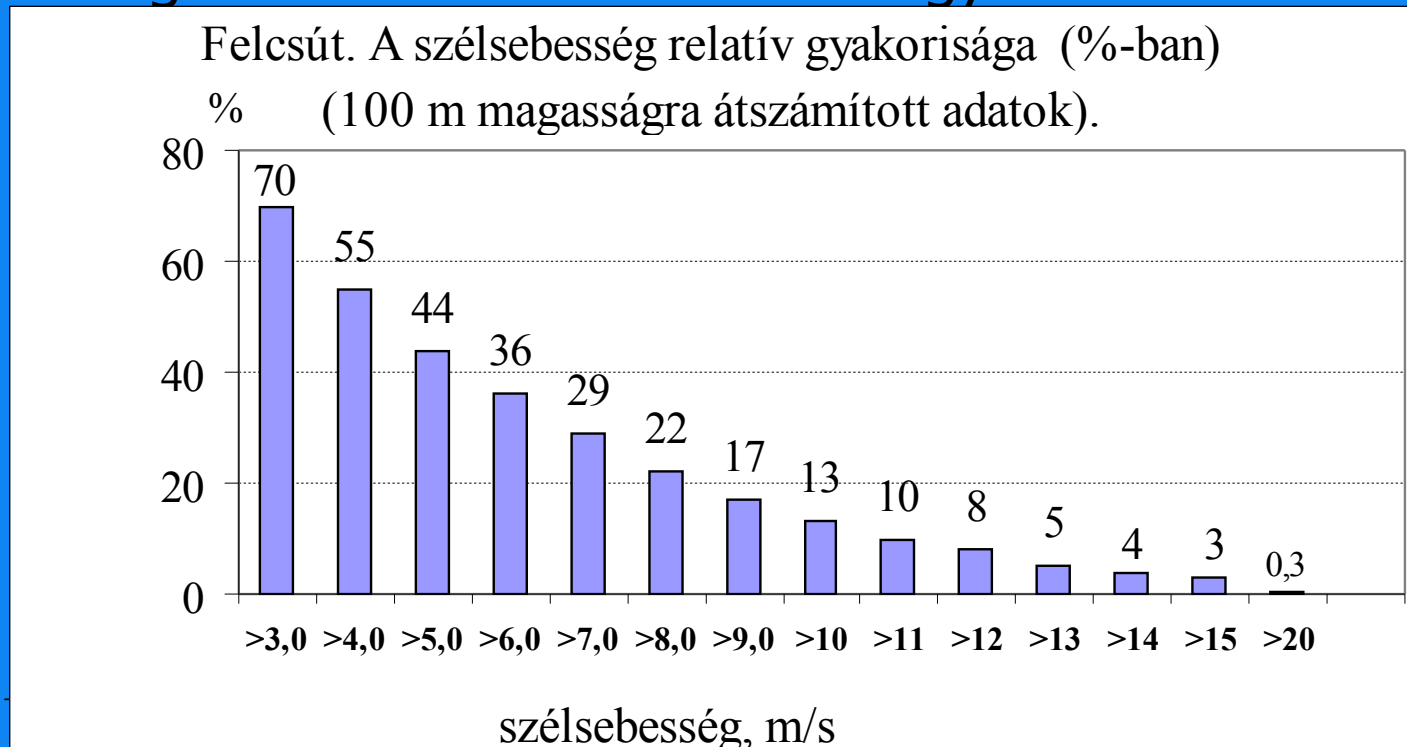
(Budapest University of Technology and Economics)

Gergely Bölöni

(speaker)

Motivations

- wind power-plant's optimal location

  → high resolution wind climatology needed

-

Felcsút. A szélsebesség relatív gyakorisága (%-ban)
% (100 m magasságra átszámított adatok).

szélsebesség, m/s	%
>3,0	70
>4,0	55
>5,0	44
>6,0	36
>7,0	29
>8,0	22
>9,0	17
>10	13
>11	10
>12	8
>13	5
>14	4
>15	3
>20	0,3

Input

1. ERA40 ECMWF reanalysis (1992-2001)

  - 40 years homogeneous assimilation cycle using 3dvar

  - 125km horizontal resolution, 60 vertical levels

2. Operative dada (downscaling of Arpege)

  - quick results if needed (wind power-plant's)
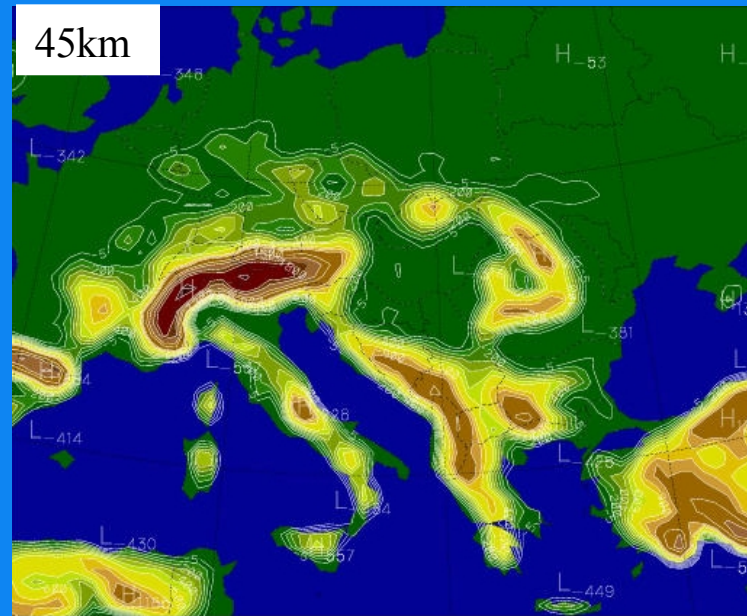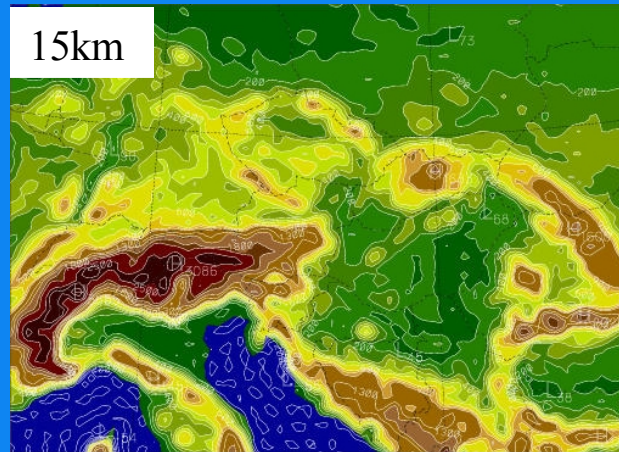
Nesting strategy

ERA40

45km

Single or double?

• Double: avoid big resolution jump + Slovenian experience
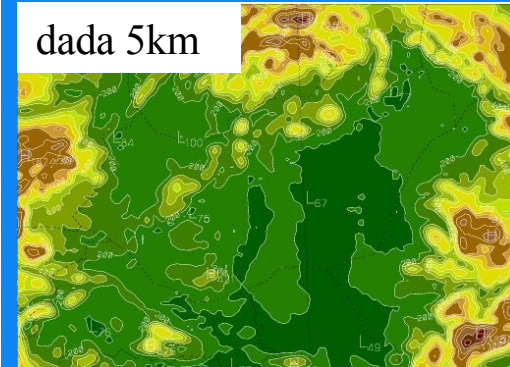
• Single: less expensive + Austrian experience

15km

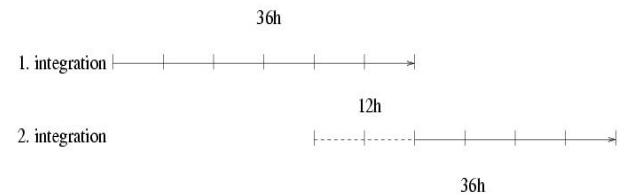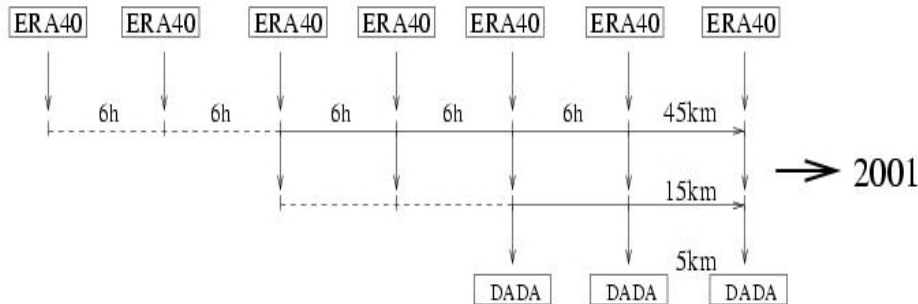dada 5km

The forecast range

compromise: spin-up ←→ reinitialization frequency

- 36 hour forecasts

- the first 12 hours are not used (remove spin-up)

So far…

- Domain definitions

- Inputs are being downloaded

- Prototype nesting script prepared

- The real work will just start …

THANKS FOR YOUR ATTENTION

…remarks are welcome!