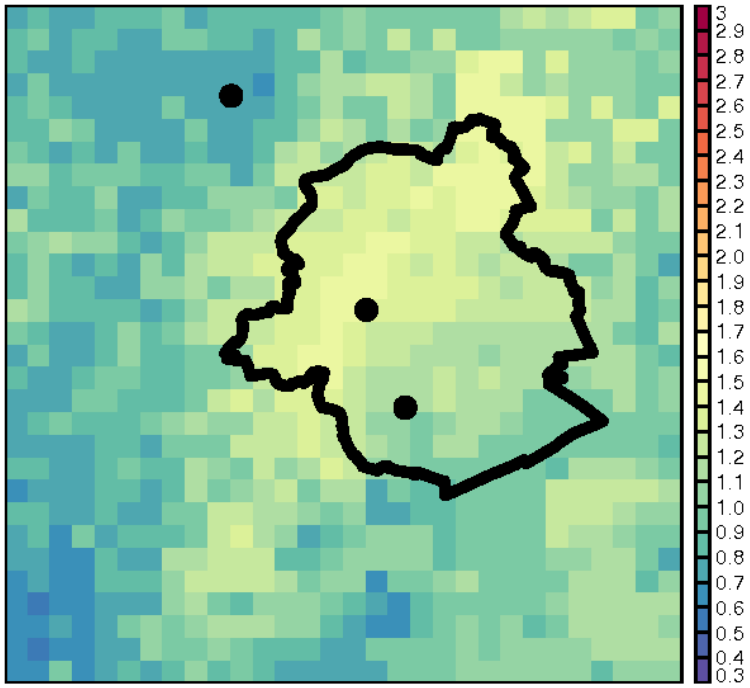
General Assembly 2012

7 Scientific and technical issues

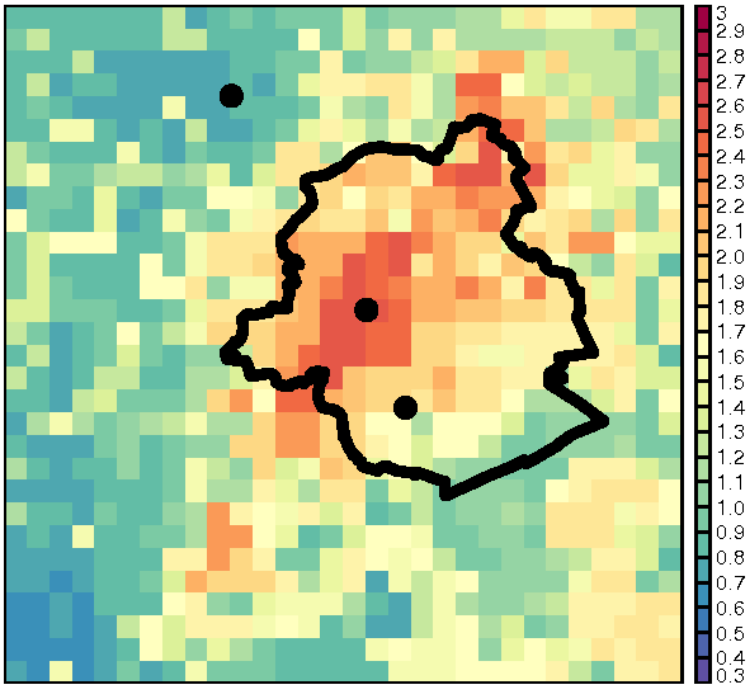
SURFEX code

- As mentioned last year this illustrates two issues:
  - How to deal with “external” code within the NWP code
  - How to find skilled experts.
- Problem: SURFEX has not been developed with the same attention to operational needs as the rest of the model code
- Example, during the SURFEX Working week in Brussels last year it turned out the to make a coupling file for the Turkish domain took about half an hour. This de facto makes the code not an operational one.

But is has a lot of potential for the high resolutions!



ERA-40 downscaling with ALARO
Without SURFEX.
The area is Brussels Capital Area.



ERA-40 downscaling with ALARO
With SURFEX (and TEB included).
The Urban Heat Island is more realistic

Courtesy Rafiq Hamdi

So the problem

SURFEX has a lot of potential

But needs extra work to make it fully fit for future operational needs

SURFEX working week 2012

- SURFEX Working Week 24-28 September 2012, Brussels.
- Scope:
  - Analysis of the code **to make SURFEX suitable for future operations**: analysis carried out by 3 experts outside Meteo France and Ryad El Khatib of Meteo France.
  - Additionally, a number of experts joined the meeting to **work on model performance**:
    - consideration of the interface with the upper air (in particular for coupling ALARO);
    - testing of the local, national applications;
    - finalizing of the paper that was started last year during the SURFEX working week in Brussels.

Outcome of the SURFEX WW

- We now have a ***potential*** core group of experts: T. Aspelien, D. Degrauwe, T. Dalkilic with supervision of Ryad El Khatib.
- A proposal was made to address the problem of the non-operationality of the SURFEX code, with two step:
  - Short term quick wins without parallellization
  - Parallellization this can be done either (1) in the SURFEX code or (2) by the NWP code. This group provides 4 arguments to rely on the NWP code.
- Conclusion of the the SURFEX WW: no one seems in the ALADIN consortium seems to know this part of the code of SURFEX (i.e. the PREP part).
- So we need about 1 month of extra work for NWP experts to get familiar with this part of the SURFEX code.

Next step issues relevant for policy:

- A flat rate stay to “get to learn PREP”, and this stay should be taken seriously!
- Currently I am in favor op option (2), but arguments of option (1) are welcome.
- But such decisions should be taken in SURFEX Steering Committee! The ALADIN consortiun (you) is represented in there, so **you might provide guidance/endorsement**.
- Also:
  - We need to know what are the requirements for SURFEX/PREP from the user community. From ALADIN and HIRLAM, even if we did not explicitly write it down, we have quite a detailed picture from the SURFEX WW.