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# **Key soil and surface issues for the next 5 years**

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COSMO User Seminar  
Offenbach, March 4 , 2013



# Background for this discussion

- The current **COSMO Science Plan** is valid for the period 2010 – 2014.
- This has to be soon **revised**, to consider the period **2015 – 2019**.
- A **first draft** should be made till 09.2013
- An **external review** will take place Q1 2014
- The **final version** should be ready in **Q2 2014**



# Some strategic aspects discussed at SMC

- **Urban module**
  - Need for an urban module in official COSMO code
  - Which one? BEP, TEB, direct implementation in TERRA?
- **Responsibility for EXTPAR**
  - Developments in the CLM community, at DWD, at MeteoSwiss
  - Coordination is missing
  - Proposal for defining EXTPAR as COSMO software, with SCA at ETHZ
- **TERRA**
  - Slow progress
  - Many developments duplicate existing features in e.g. the Community Land Model
  - Is it reasonable to continue investing in TERRA?



# Input from DWD colleagues

- **Possible developments at DWD, in decreasing priorities**
  - Better representation of **subgrid inhomogeneities** (tiles)
  - Revision of **soil heat conductivity** approach
  - Improved **snow-vegetation interaction** (e.g. snow processes in forest)
  - Need of **high-resolution soil data**, that fits better the LAM resolution
  - Need of **high-resolution topo data** for COSMO-resolutions below 1 km
  - **Assimilation** of soil moisture from remote sensing products
  - Improved representation of **vegetation state**
  - **Implicit coupling** between surface and atmosphere
- **Model extensions**
  - **Standalone** soil module (for model development)
  - **Snow over ice** (sea/lake)
  - **Urban** module



# Discussion

- Main strategic issues for the period 2015 -2019 ?
- Main weaknesses of current SVAT ?
- Main missing components ?
- Who is interested contributing to the revision of the Science Plan ?