INSPECT: INtercomparison of SPatial vErification methods for COSMO Terrain,
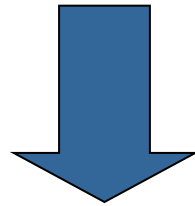
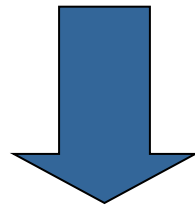## project proposal plan

A. Bundel, F. Gofa

COSMO GM 2014

Need of new spatial methods

- Very high resolution models
- Availability of radar and merged radar-station observations

Traditional verification scores often indicate poor performance because of the increased small-scale variability

Numerous new spatial verification methods

ICP->MesoVICT

- **"The intent of this project is to compare the various newly proposed methods to give the user information about which methods are appropriate for which types of data, forecasts and desired forecast utility"**

- Sets of test cases: domains, models, observations

- In MesoVICT: ensembles, variables besides precipitation, meteorological events that occur over a period of time

New spatial methods

Filtering methods

Displacement methods

- **Neighborhood**

  (Ebert, 2008)

- **Scale Decomposition**

- **Features-based**
  - ✓ Contiguous Rain Area (CRA)
    (Ebert and McBride, 2000)
  - ✓ Method for Object-based
    Diagnostic Evaluation (MODE)
    (Davis et al., 2006)
  - ✓ SAL technique
    (Wernli et al., 2008)

- **Field Deformation**

COSMO experience

- Neighborhood
- SAL
- **INTERP** project using B. Ebert tool, models of 2km resolution,

  the most useful scores identified:

  - ✓ Upscaling
  - ✓ Fractions Skill Score
  - ✓ Intensity Scale

INSPECT

- COSMO versions of 1-3km resolution wrt 7km
- Ensembles
- Other variables besides precipitation
- Other methods besides Neighborhood and SAL
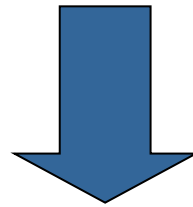
- **General guidelines for using the new spatial methods, which method(s) should be used for which purpose**

Questions

- Which models will participate?
- Which domains and observations to use? (MesoVICT or COSMO own)
- VAST software: weather to include in it other methods besides Neighborhood?
- R SpatialVx – free rapidly developing tool, will we use it?
- Intercomparison of models themself based on the conclusions about the methods?

And the final (or first) question – Do we need such a project at all?

Thank you for your attention!