(S)PP 1167 Quantitative Precipitation Forecast

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Overview

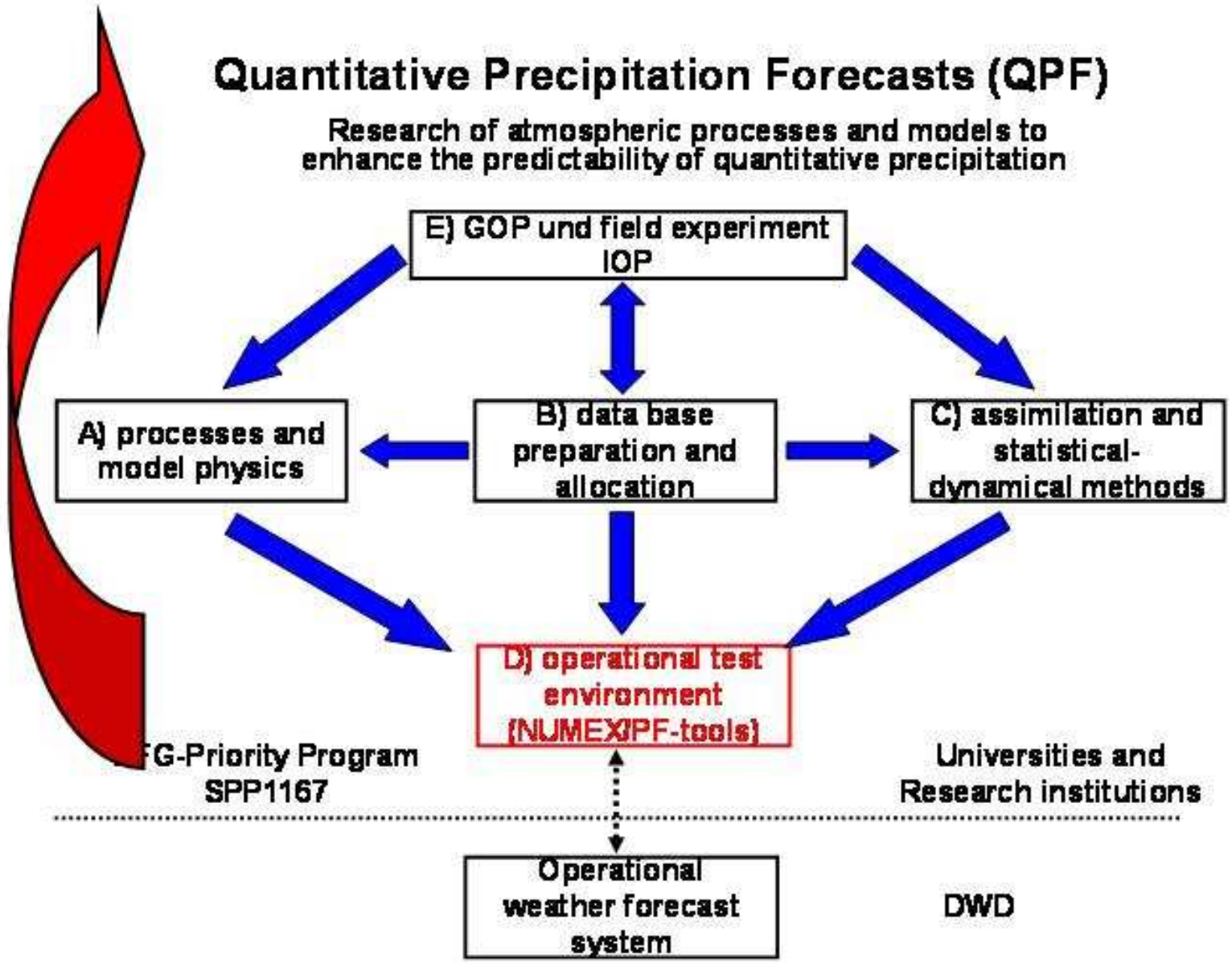
- PP1167 Proposal submitted February 2003 and accepted by DFG in May 2003
- Initiative by: G. Adrian, C. Kottmeier, C. Simmer, V. Wulfmeyer, A. Hense
- Project proposals evaluated December 2003, funding started April 2004
- At the core of the PP:
  - Close cooperation with DWD

Goals for QPF Research

- **Identification of physical and chemical processes responsible for the deficiencies in quantitative precipitation forecast**
- **Determination and use of the potentials of existing and new data and process descriptions to improve quantitative precipitation forecast**
- **Determination of the prognosis capacity of weather forecast models by statistico-dynamic analyses with respect to quantitative precipitation forecast**

- **Understanding of atmospheric processes relevant to precipitation formation has to be improved considerably. These processes have to be modeled in a more realistic manner.**
- **Initial distribution of the atmospheric water content in the three phases of vapor, liquid, and ice has to be improved by data that have not been used so far and new data. Their potential for quantitative precipitation forecast has to be quantified.**

- **Methods of assimilating measurement data into atmospheric simulation models and application of these methods to data of any type for a statistico-dynamically consistent retrieval of the initial water distribution and, hence, optimum use of all data have to be improved.**
- **The stochastic character of precipitation has to be taken into account when using observational data, interpreting deterministic simulations, and developing alternative forecast strategies.**


Quantitative Precipitation Forecasts (QPF)
Research of atmospheric processes and models to enhance the predictability of quantitative precipitation
E) GOP und field experiment IOP
A) processes and model physics
B) data base preparation and allocation
C) assimilation and statistical-dynamical methods
D) operational test environment (NUMEX/PF-tools)
FG-Priority Program SPP1167
Universities and Research institutions
Operational weather forecast system
DWD

- Currently 23 projects
  - 4 assimilation, 3 ensemble forecasting
  - 3 microphysics, 1 numerics
  - 5 verification/nowcasting, 1 theory
  - 3 orography/surface, 3 IOP/coordination
  - 2 convection, 1 remote sensing
- Further informations:
  - www.meteo.uni-bonn.de/projekte/SPPMeteo