

Energy-Specific Solar Radiation Data from Meteosat Second Generation (MSG) The Heliosat-3 Project

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OUTLOOK AND OPPORTUNITIES

- ▶ What do we have?
- ▶ What will we have?
- ▶ Two applications
 - ▶ Solar Irradiance Forecasting
 - ▶ Grid Integrated Solar Electricity

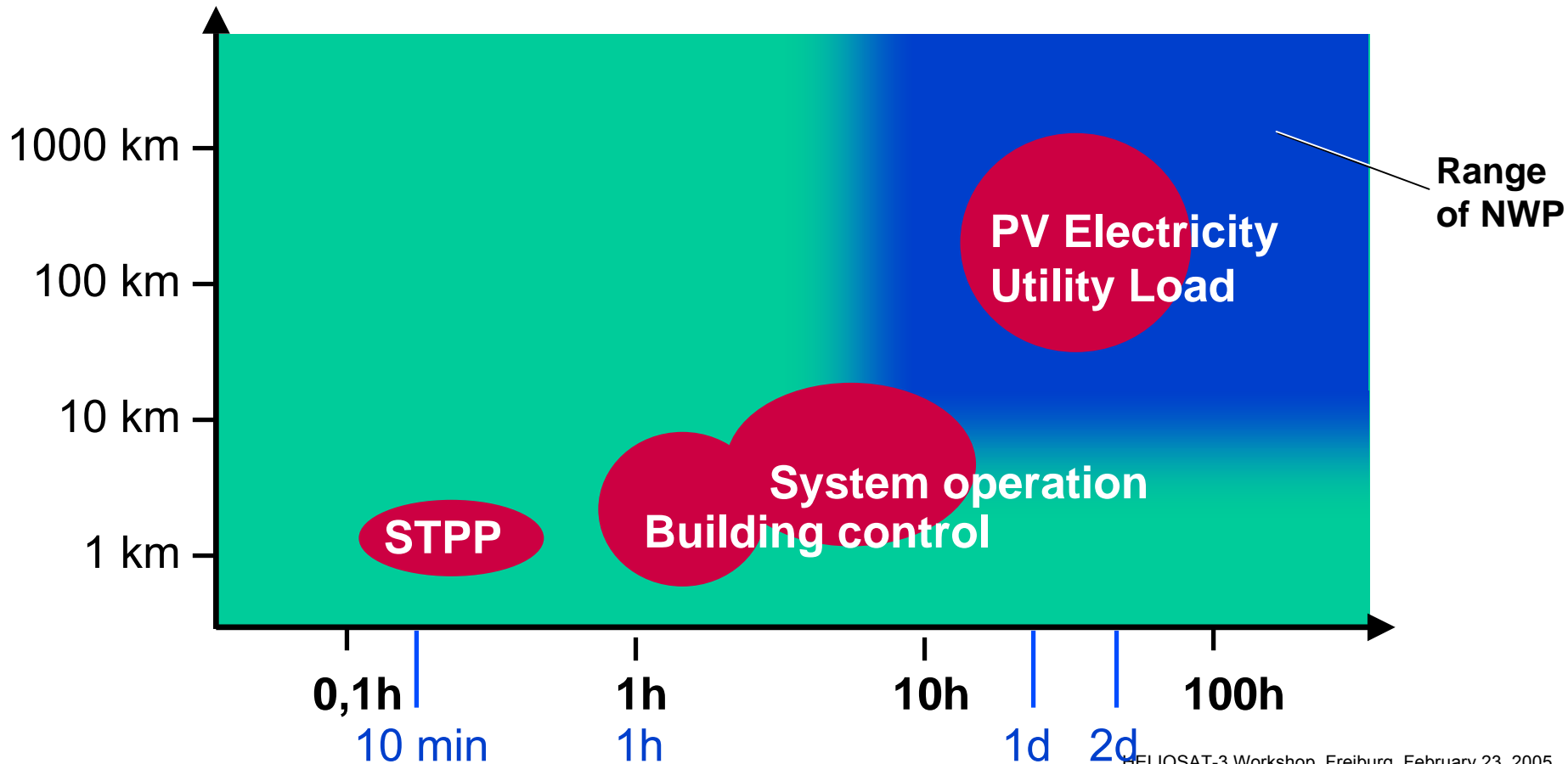
WHAT DO WE HAVE?

- ▶ Operational measurement of solar irradiance with high spatial resolution
- ▶ Quality of global irradiance for resource assessment comparable to pyranometer measurements
- ▶ Single-site measurements on hourly and sub-hourly time scale with reduced accuracy
- ▶ „Value-added“ products based on these data

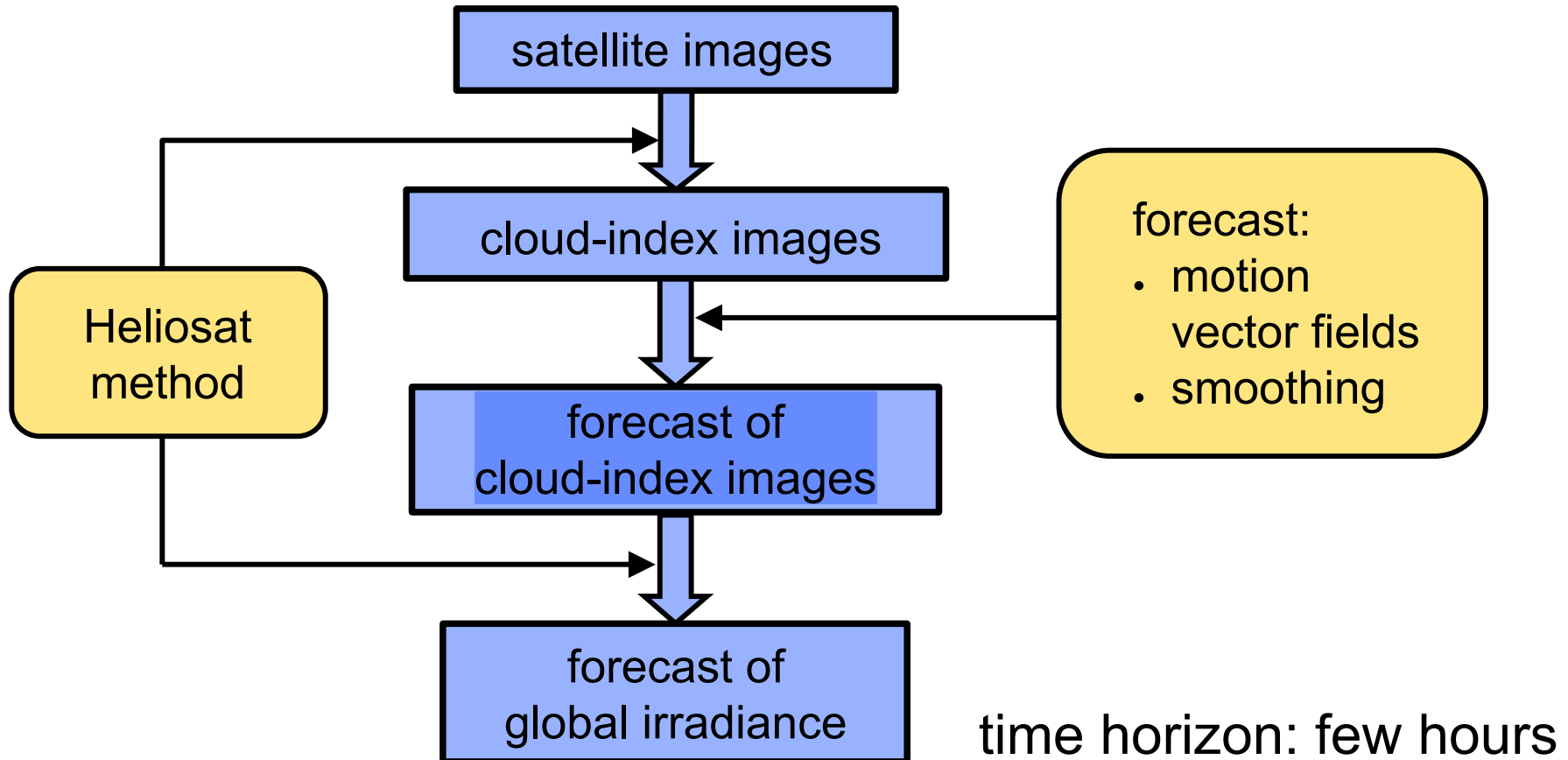
WHAT WILL WE HAVE?

- ▶ Exploit full capacity of method (aerosols, clouds)
- ▶ Satellite data become standard source for solar irradiance
- ▶ Solar-energy specific data with similar quality: Direct normal, spectral irradiance, angular distribution, ..
- ▶ Detailed information about spatial structure of irradiance
- ▶ Global coverage of high quality irradiance data
- ▶ F o r e c a s t i n g

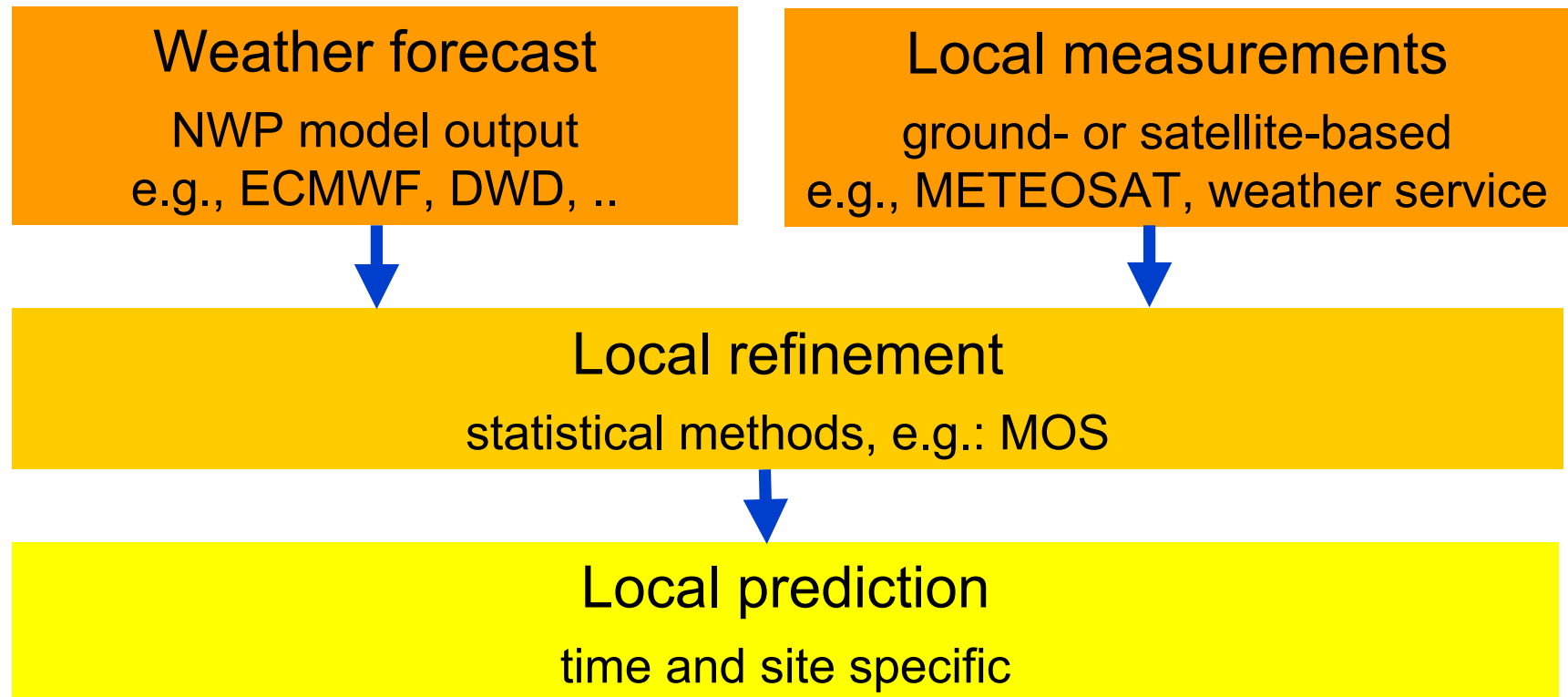
APPLICATIONS AND SPATIAL AND TEMPORAL SCALES OF FORECASTING



SHORT-TERM FORECASTING SCHEME



OPERATIONAL FORECASTING ≥ 1 day



GRID INTEGRATED SOLAR ELECTRICITY

- ▶ Management of electricity grids will be highly IT-based: Information substitutes energy (“control interface“)
- ▶ Satellite-based irradiance data provides near real-time overview of PV production in combination with GIS-based information on PV capacity
- ▶ integration of forecasting information for both production and load