www.bsc.es

Barcelona, 25 May 2015

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

EARTH SCIENCE DEPARTMENT

Tom Philp (XL Catlin)

Services – Earth Science Department

Barcelona Supercomputing Center

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

EXCELENCIA SEVERO OCHOA

- Created in 2005; 350 employees
- Research, develop and manage information technology
- Facilitate scientific progress and its application in society

Earth Science Department

- **Atmospheric composition modelling**
- **Climate prediction modelling**
- **Computational Earth Sciences**
- **Earth Sciences Services**

People in 2015

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

EXCELENCIA SEVERO OCHOA

Francisco Doblas-Reyes
Mar Rodriguez
Gabriela Tarabanoff

Computational Earth Sciences

Kim Serradell
Oriol Mula-Valls
Francesco Benincasa
Pierre-Antoine Bretonnière
Carles Carmona
Miguel Castrillo
Muhammad Asif
Domingo Manubens
Nicolau Manubens
Oriol Tintó
Dídac Roca

Climate Prediction

Virginie Guemas
Omar Bellprat
Louis-Philippe Caron
Eleftheria Exarchou
Neven Fuckar
François Massonnet
Martin Ménégoz
Chloé Prodhomme
Danila Volpi

Atmospheric Composition

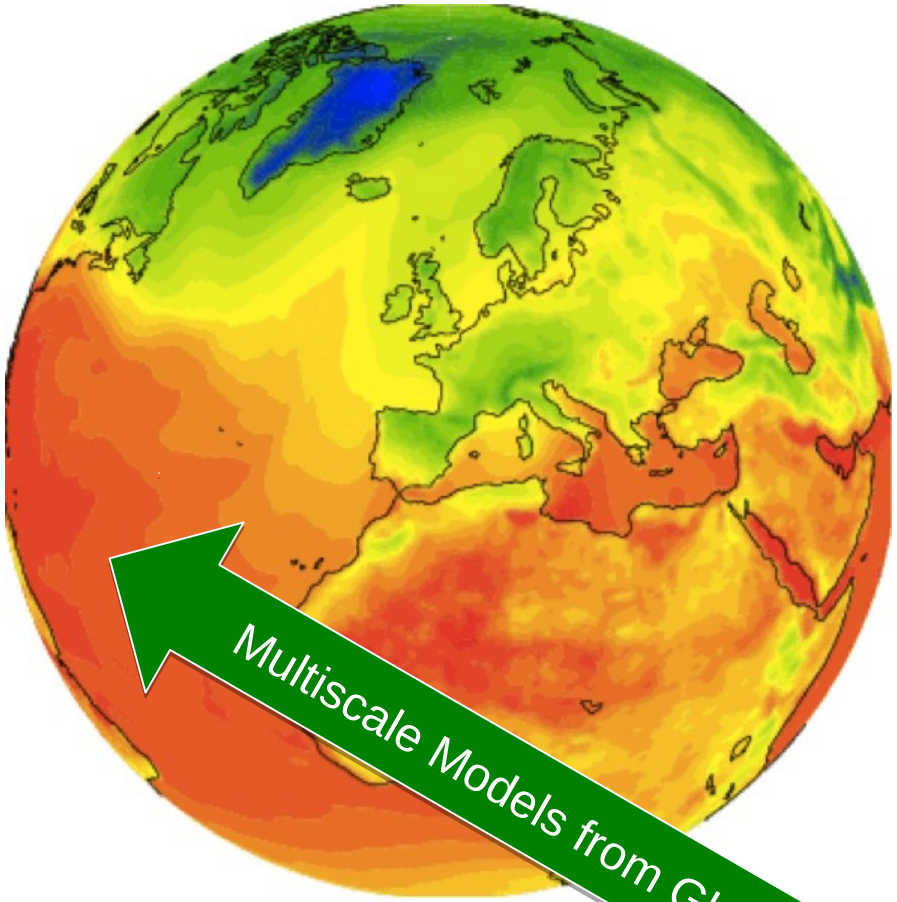
Oriol Jorba
Sara Basart
Enza Di Tomazzo
Lorenzo Fileni
Antonis Gkikas
Maria Goncalves
Marc Guevara
Vicenzo Obiso
Michele Spada
Maria Teresa Pay
Victor Valverde
Lluis Vendrell

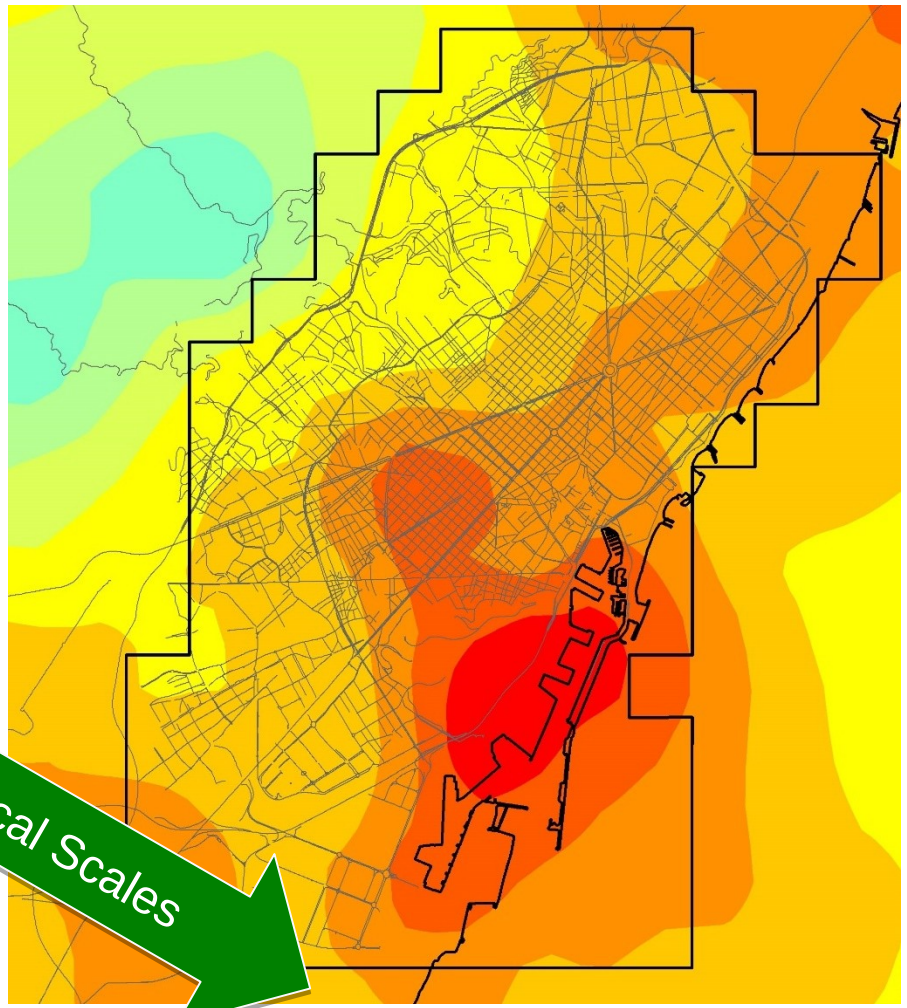
Earth System Services

Gustavo Arévalo
Melanie Davis
Nube González
Aida Pinto
Valentina Sicardi
Albert Soret
Enric Terradellas
Verónica Torralba

Spatial scales

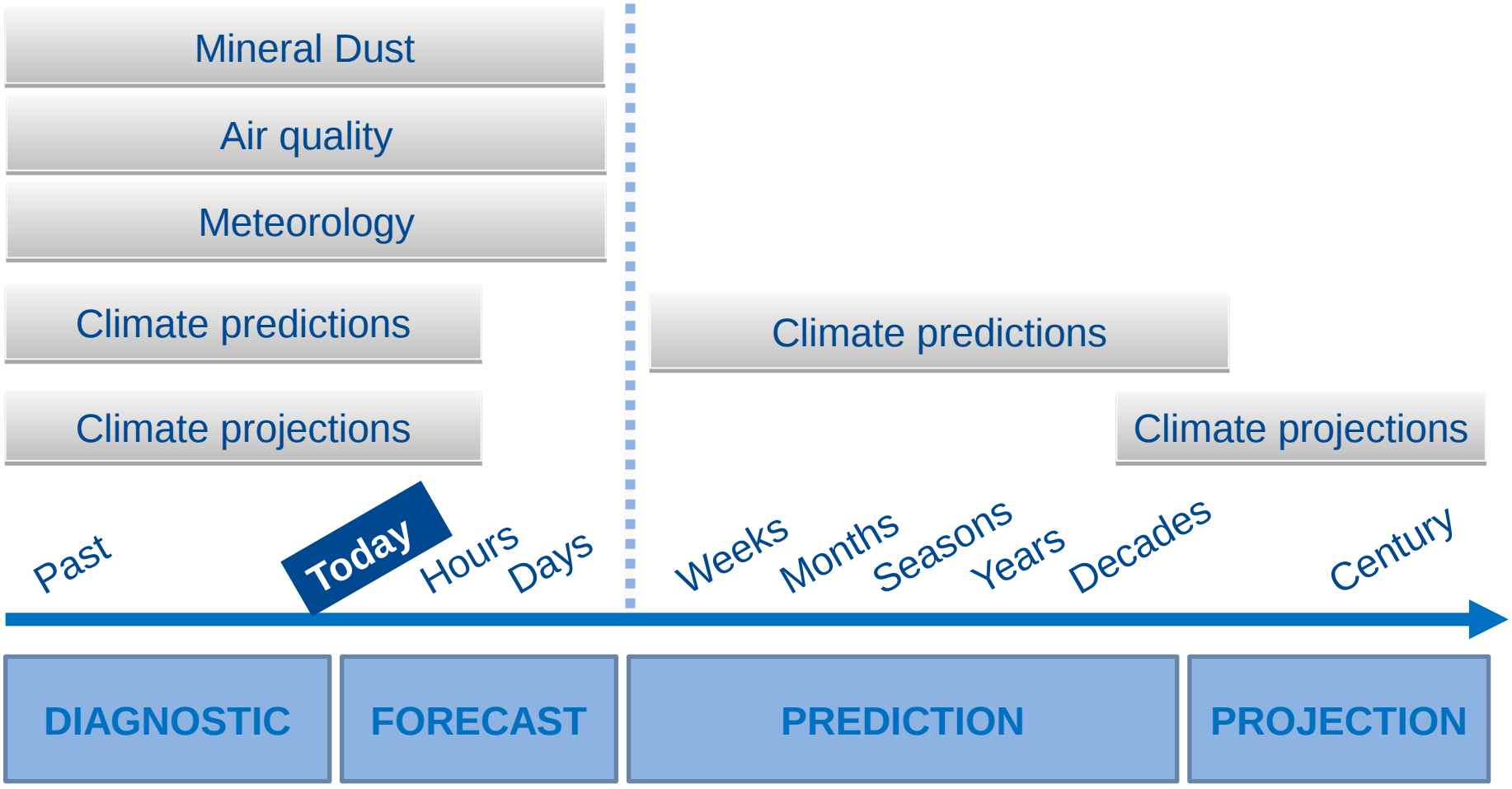
Multi-scale models from global to local scales





Multiscale Models from Global to Local Scales

Temporal scales



www.bsc.es

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

EXCELENCIA SEVERO OCHOA

Earth System Services

National and International collaborations

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

EXCELENCIA SEVERO OCHOA

RACC

SEAT

Applus IDIADA

BCN ECOLOGIA Agència d'Ecologia Urbana de Barcelona

oca group

METEO SIM

inLab FIB talent & tech

Generalitat de Catalunya

JUNTA DE ANDALUCIA CONSEJERÍA DE MEDIO AMBIENTE

AEMet Agencia Estatal de Meteorología

meteo.cat

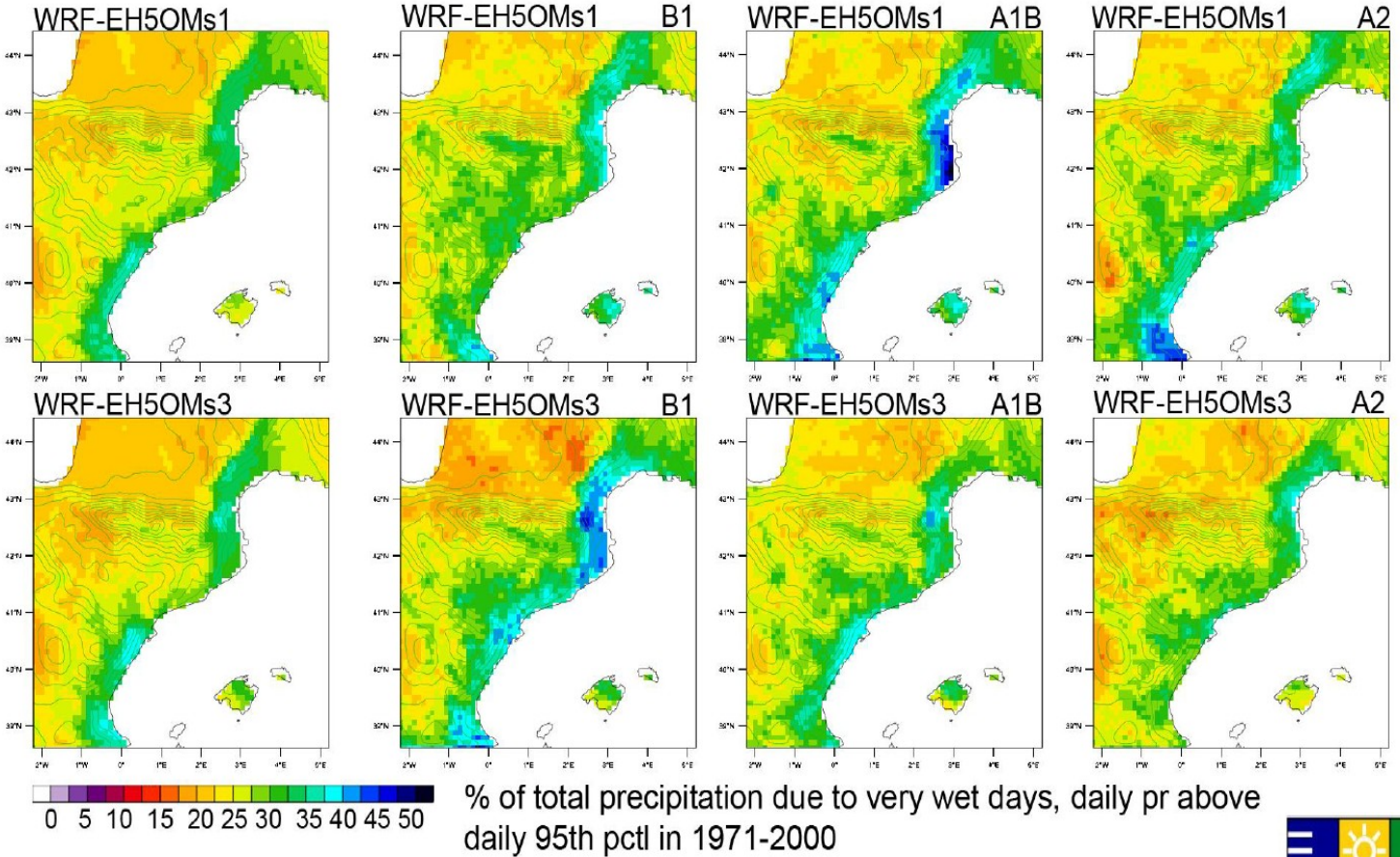
Regional climate modeling

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

EXCELENCIA SEVERO OCHOA

Dynamical downscaling of climatic temperature and precipitation trends

This work aims to provide an assessment of temperature and precipitation projections for mid-21st century in the North Western Mediterranean Basin (NWMB) at high resolution.



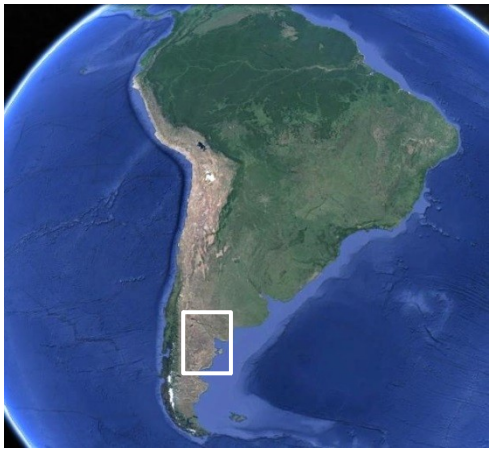
This project has been conducted in collaboration with Servei Meteorològic de Catalunya:

meteo.cat

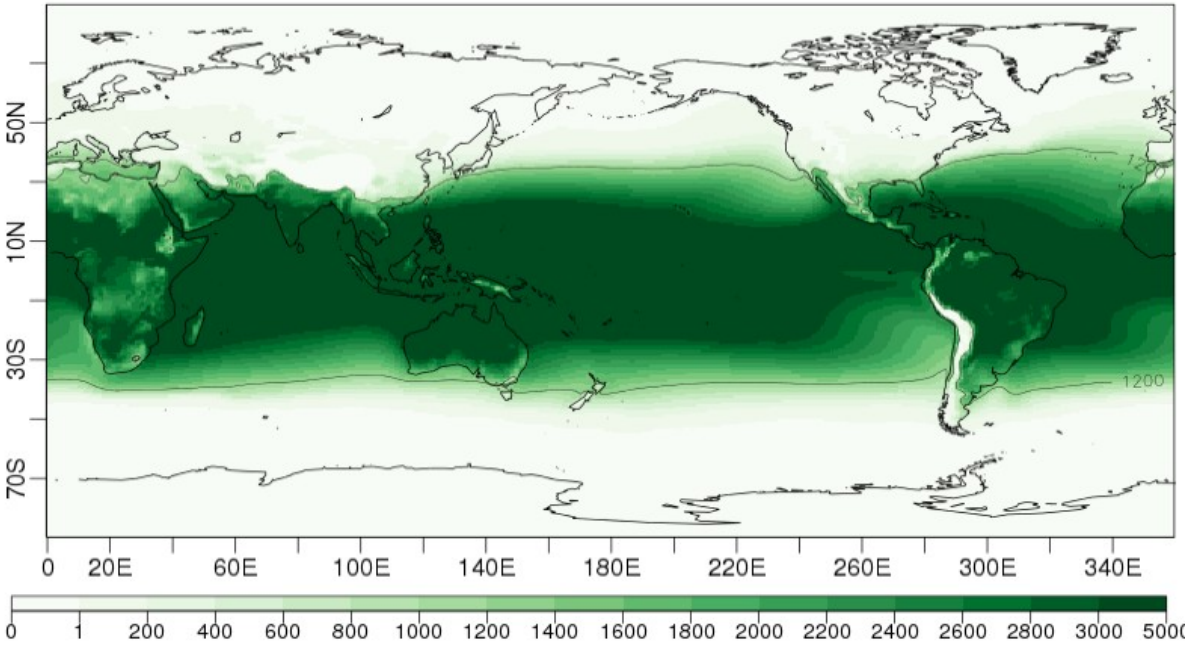
Planning of vineyards fields

TORRES

1870



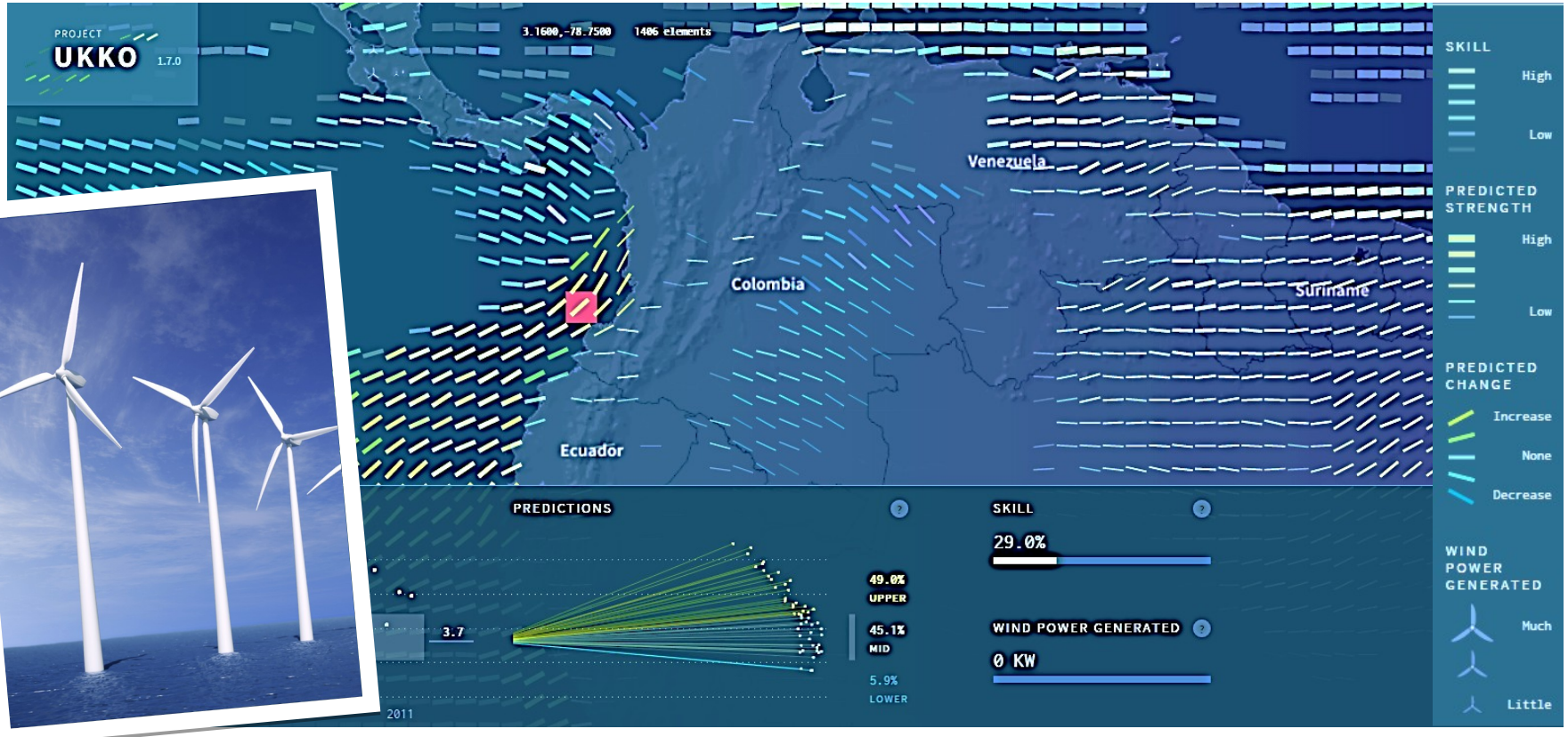
Winkler Index: Oct-Abr



Seasonal wind power predictions

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

EXCELENCIA SEVERO OCHOA



RESILIENCE
PROTOTYPE

SPECS
EUPORIAS
SEVENTH FRAMEWORK PROGRAMME
eDF
edp renewables
ALSTOM
VORTEX
natural power
EnBW

Water management and seasonal predictions

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

EXCELENCIA SEVERO OCHOA

Potential applications in FLOOD RISK - WATER SUPPLY

- **Sub-seasonal** predictions (one month ahead)
- **Seasonal** predictions (the season ahead)
  - General trends for precipitation,Temperature, etc.
- **Downscaling** of climate variables.

- Informing Hydroelectric power management
- Early warning systems for extreme events
- Information on drought periods or flood risk

Potential collaborations

- **IMPREX (Horizon 2020).** (Improving predictions and management of hydrological extremes)
  - Updates on research advances
  - Feedback
  - Participation in user workshops
- **New projects** as partners or stakeholders
  - New program H2020 2016-2017
  - ITN CODA

www.bsc.es

Thank you!

For further information please contact

info-services-es@bsc.es
albert.soret@bsc.es