

Direct Normal Irradiance Nowcasting methods for optimized operation of concentrating solar technologies

DNI Cast

Overview of the project: purpose, objectives and ambitions

2nd End User Workshop
Wessling, December 2nd, 2015



CENTRO NACIONAL DE
ENERGIAS RENOVABLES
NATIONAL RENEWABLE
ENERGY CENTER



DLR



Laboratory of Atmospheric Physics
LapUp
University of Patras



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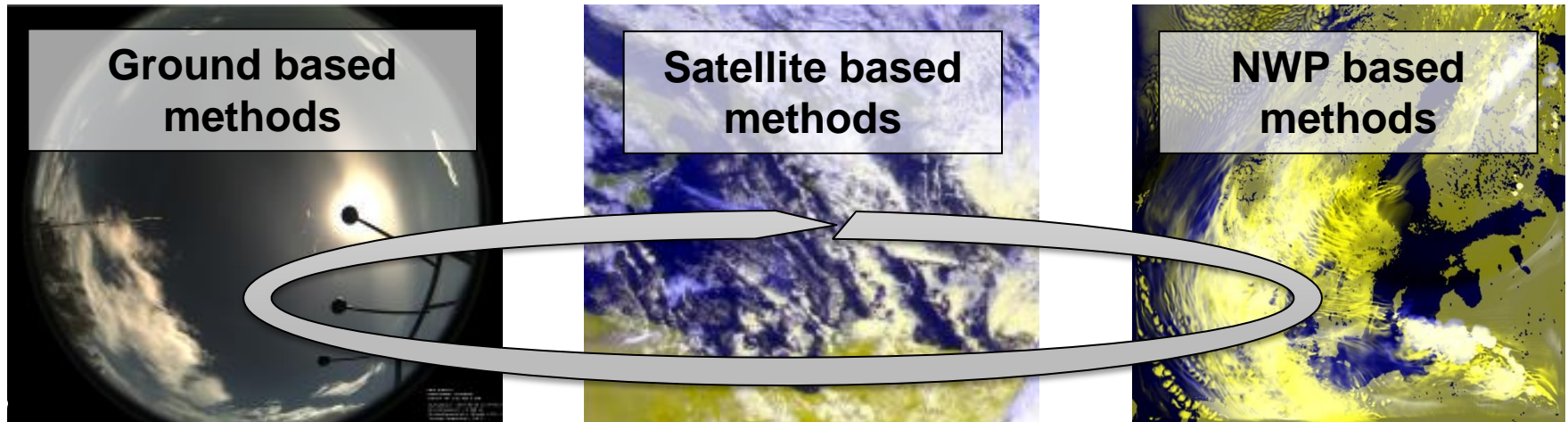


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DNI Cast – at a glance



DNI nowcasting methods for optimized operation of CST

now
-
4 hours



- + validation
- + knowledge sharing & users
- + dissemination & communication

Main project objectives

- Establish a **portfolio of innovative methods** for the nowcasting of DNI and how to combine these methods
- **Validate the nowcasts and assess the influence** of improvement in DNI nowcasting on nowcasting of CST and CPV plant output
- Provide state of the art reports and **guidance** which methods can be applied for which purpose/accuracy requirement and in which combination
- Involve the **potential users** of nowcasting methods, ensure easy uptake of knowledge in **operations and privat sector services**

- Optimize **energetic & financial yield & plant life time**
- CSP (Concentrating Solar Power) plant operation
 - involves e.g. control of
 - thermal storage & defocussing (avoid overload dumping)
 - heat transfer fluid mass flow
 - fossil heaters
 - turbine load: decision on long partial load or shorter full load
 - Good operator decisions need nowcasting
 - CSP system does not react instantaneously to control
- CPV: avoid ramps by defocussing
- DNICast is not about grid effects



The Consortium



Observatoire Méditerranéen de l'Energie, OME, France

CENER, Spain



CENER



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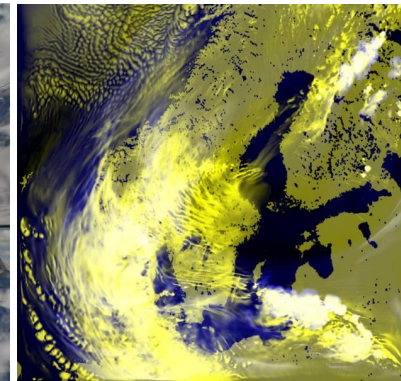
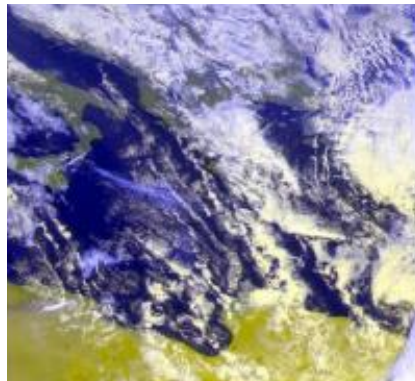
Thank you

For further information on the project please visit:

<http://www.dnicast-project.net>



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Images: DLR, SMHI



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