



# Forecast

25 June 2015, Tønsberg

## Power Forecasting

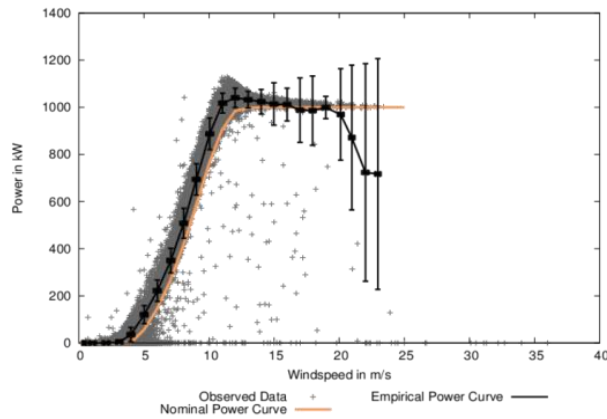
PRESENTED BY: Matteo Mana

windsim

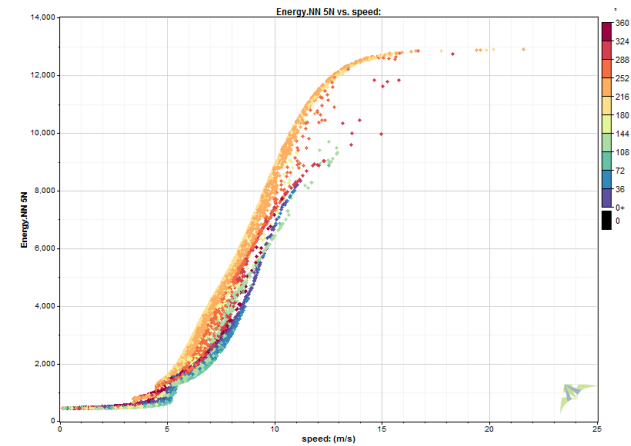
# WindSim Forecasting

## Connecting Forecast Wind to Wind Energy

### Empirical Power Curve



### Artificial Neural Network “Power Curve”



# Coupling Mesoscale and CFD

Global Models  
100 - 16 km  
e.g. ECMWF, GFS

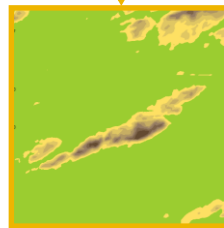


Regional Models  
9 - 1 km  
e.g. WRF



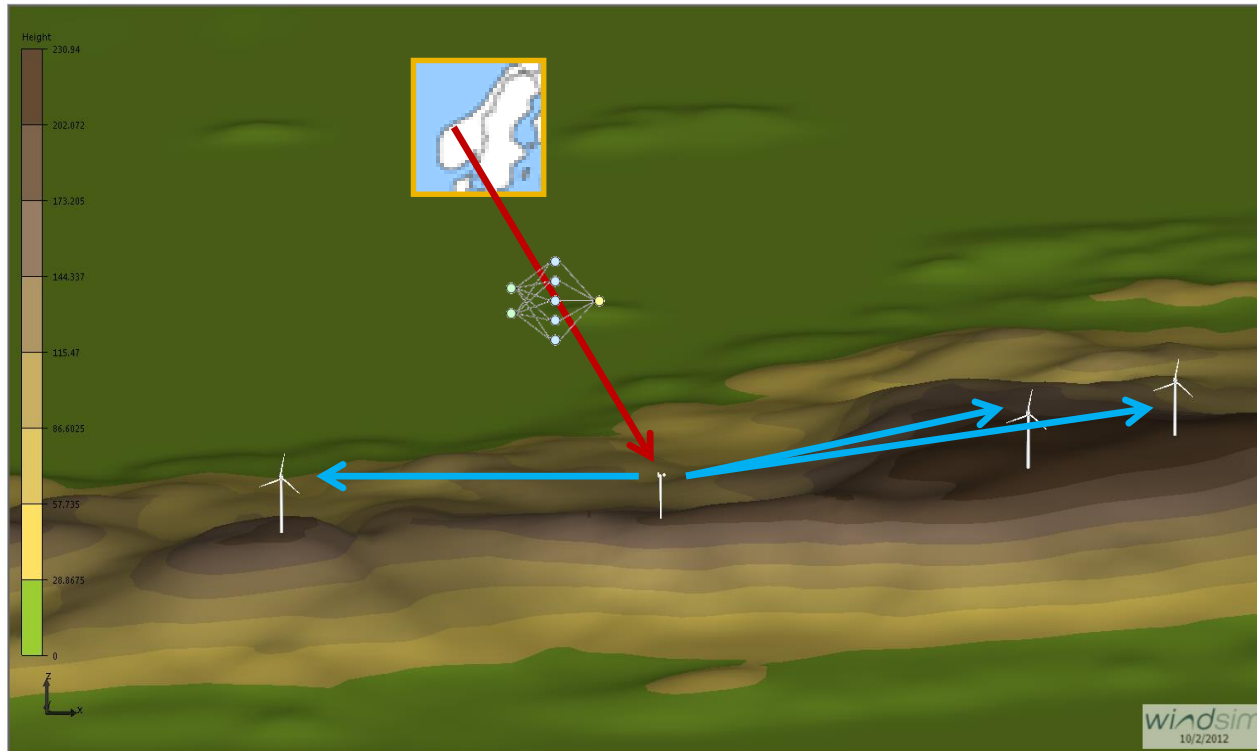
Description of the  
atmospheric  
conditions

Micro Model  
100 - 10 m  
WindSim



Accurate description  
of the local flow field  
and the wake effects

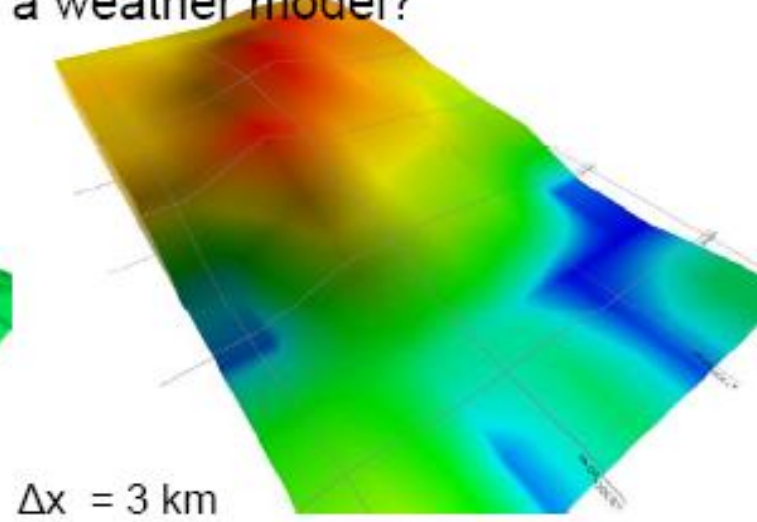
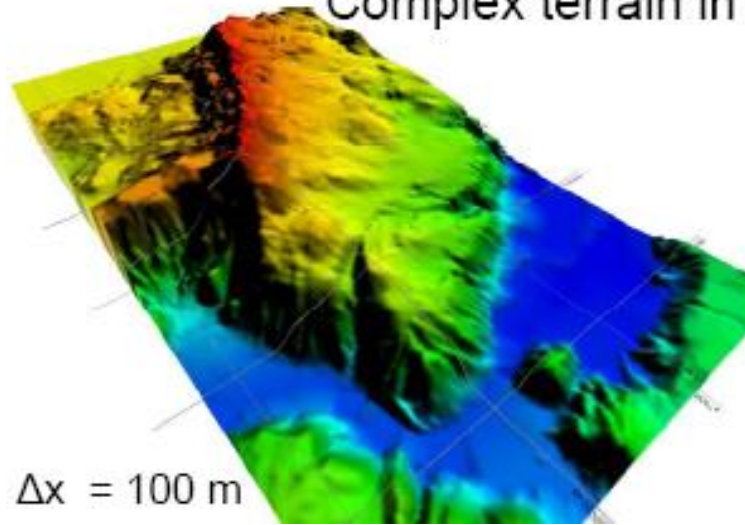
# Coupling Mesoscale and CFD using ANN



# Mesoscale Models

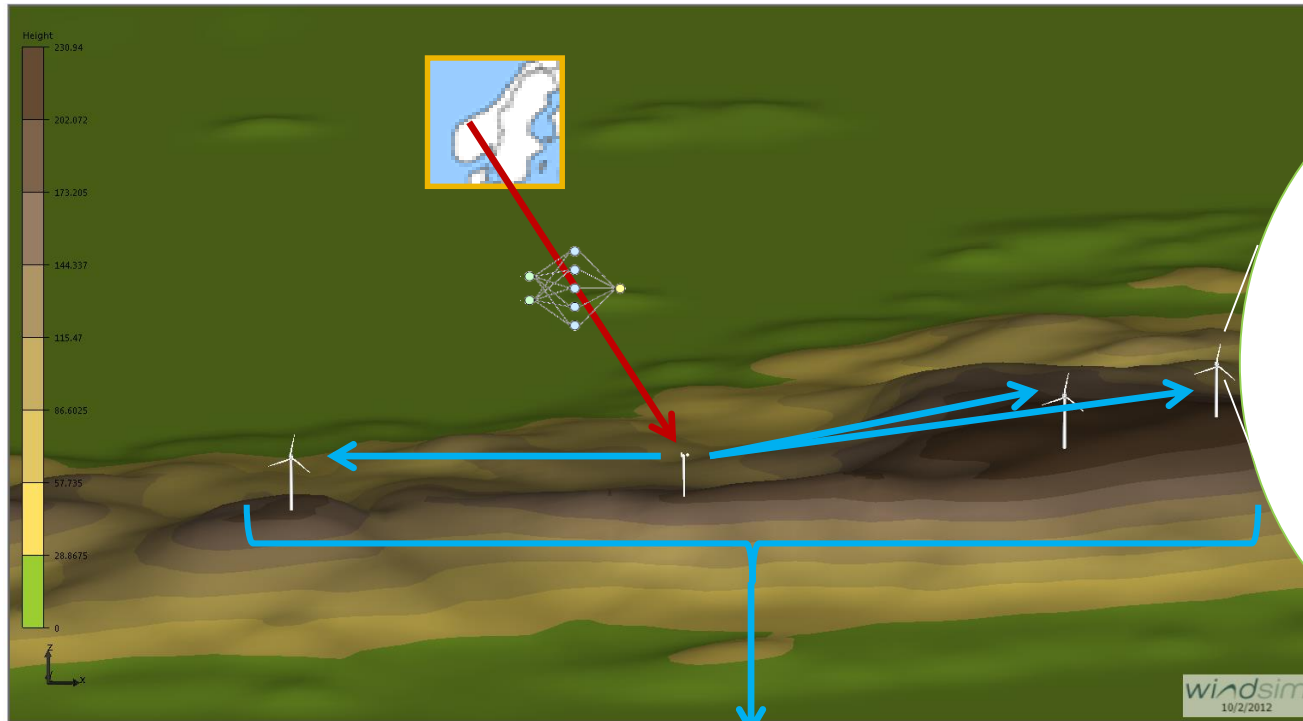
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Complex terrain in a weather model?

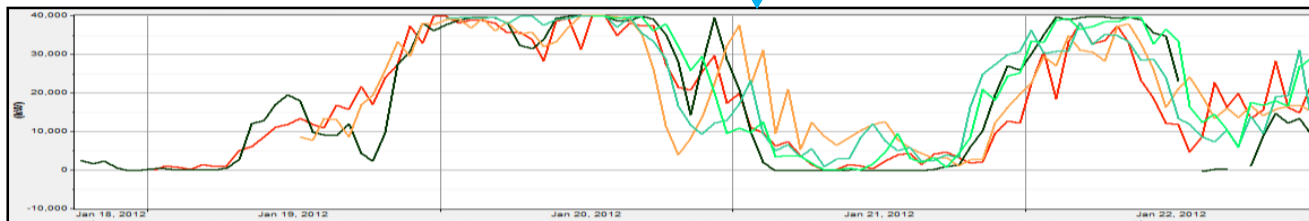
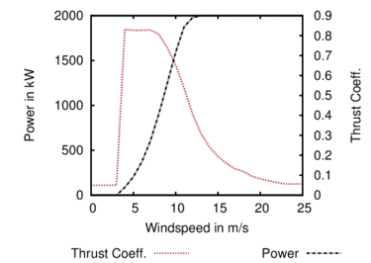




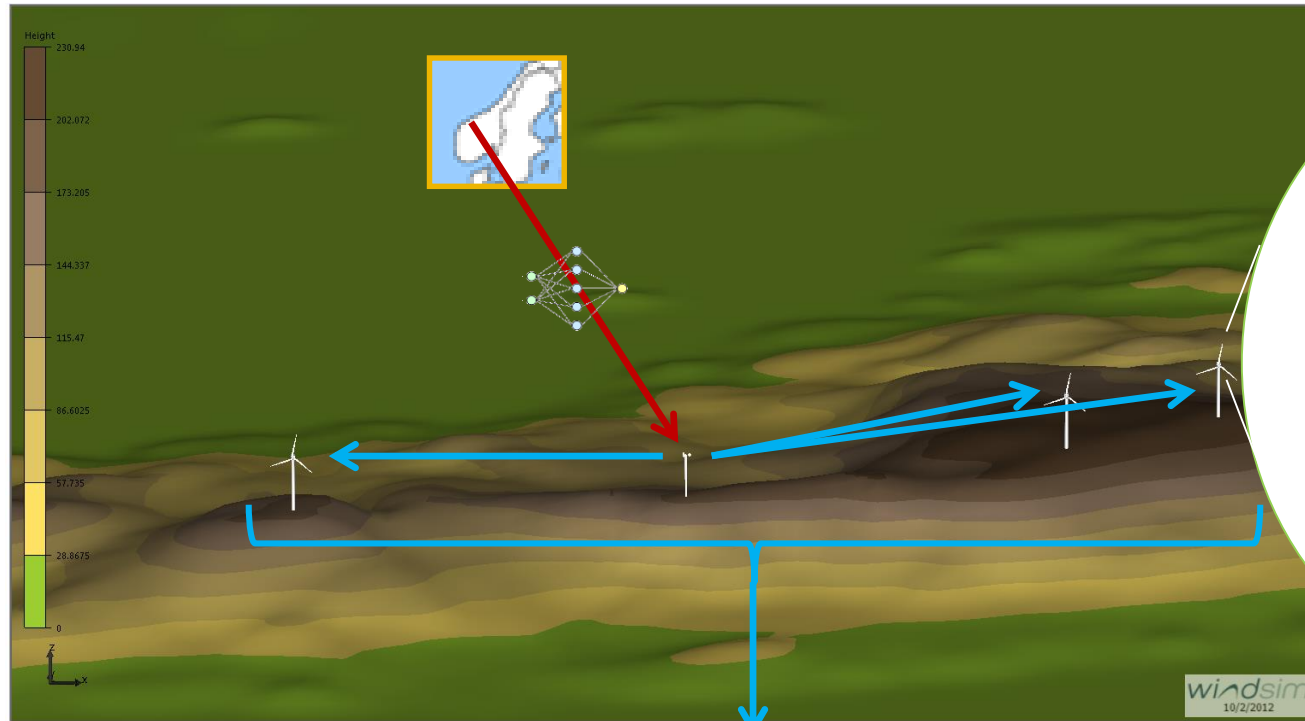
# WindSim Forecasting



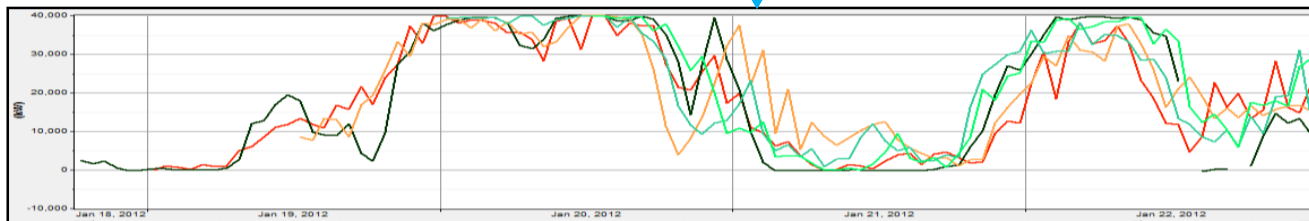
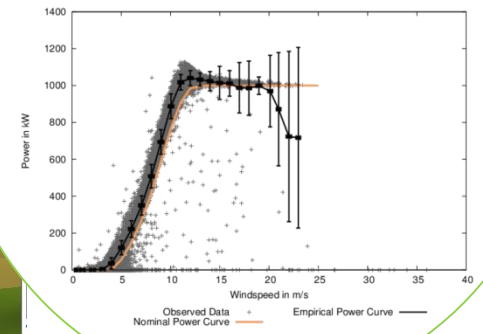
## Nominal Power Curve



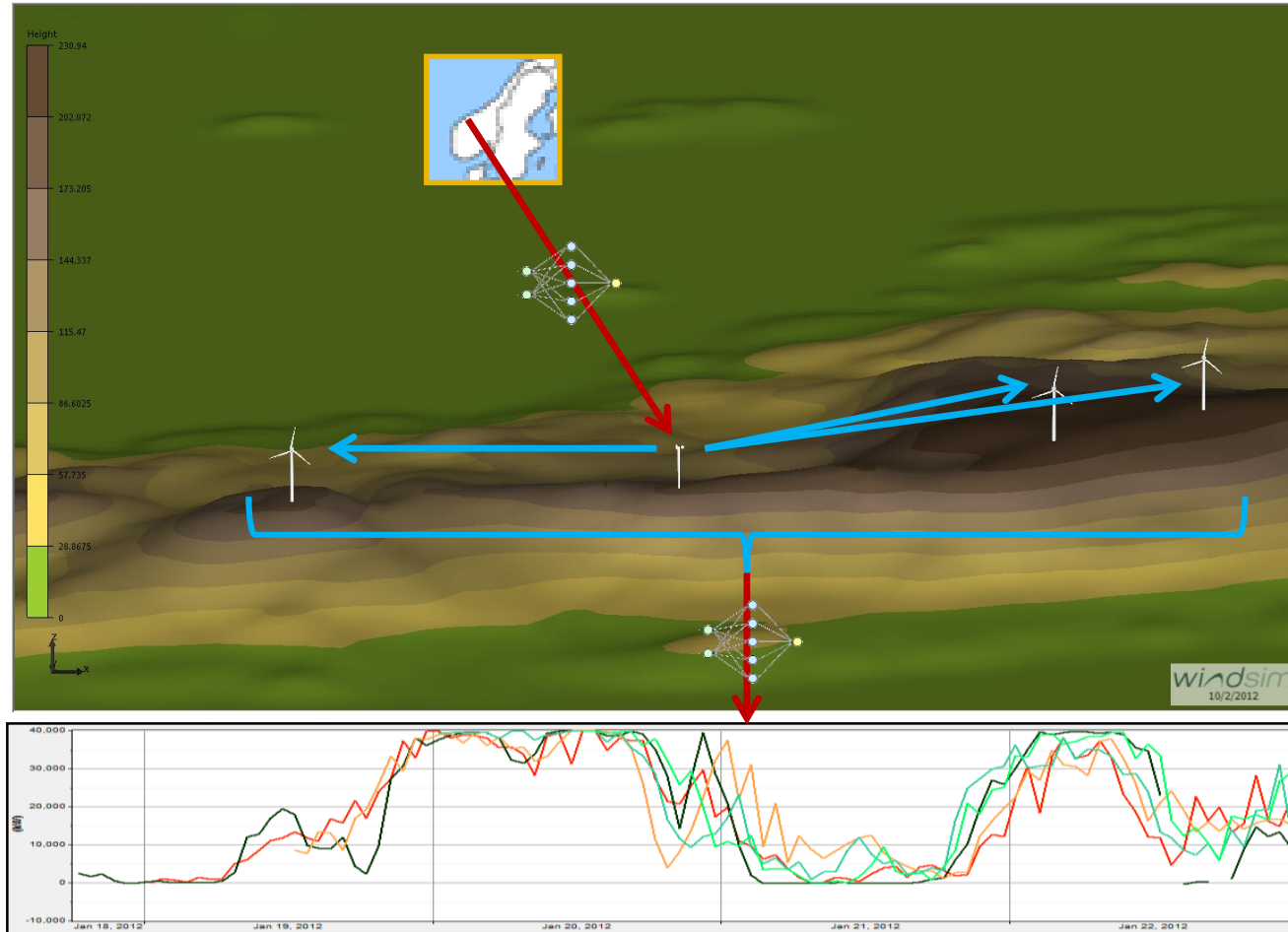
# WindSim Forecasting



## Empirical Power Curve

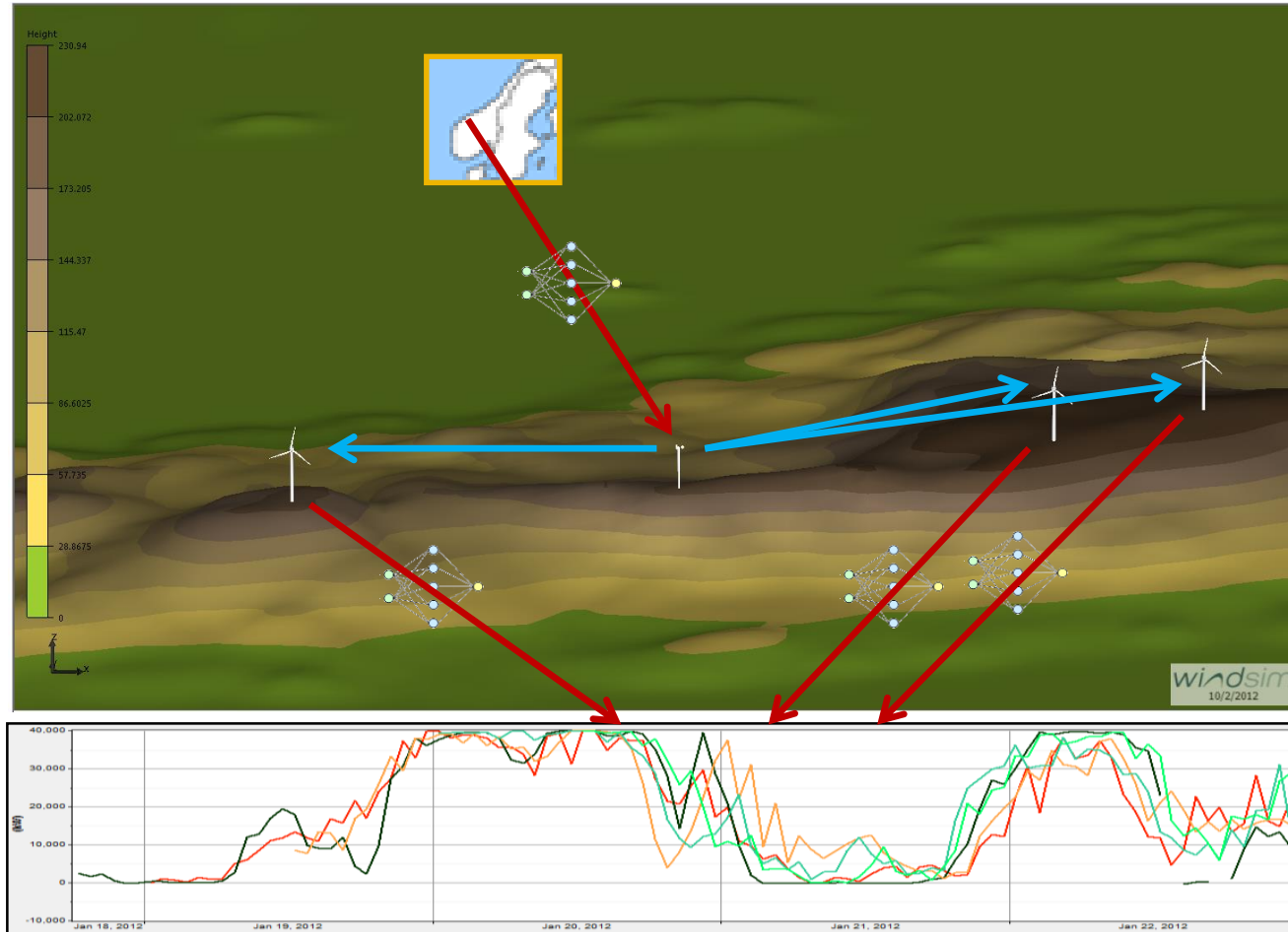


# WindSim Forecasting

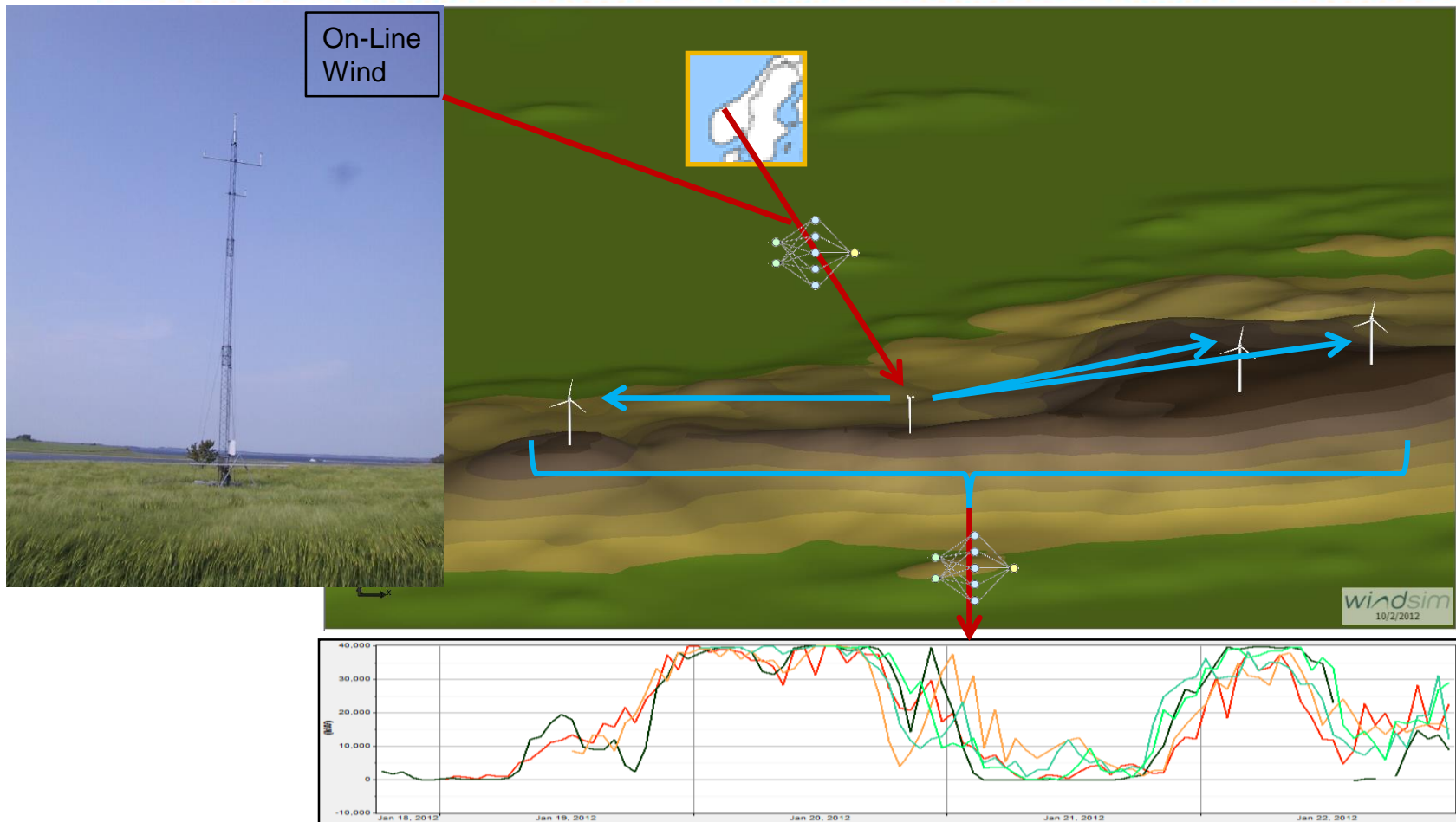




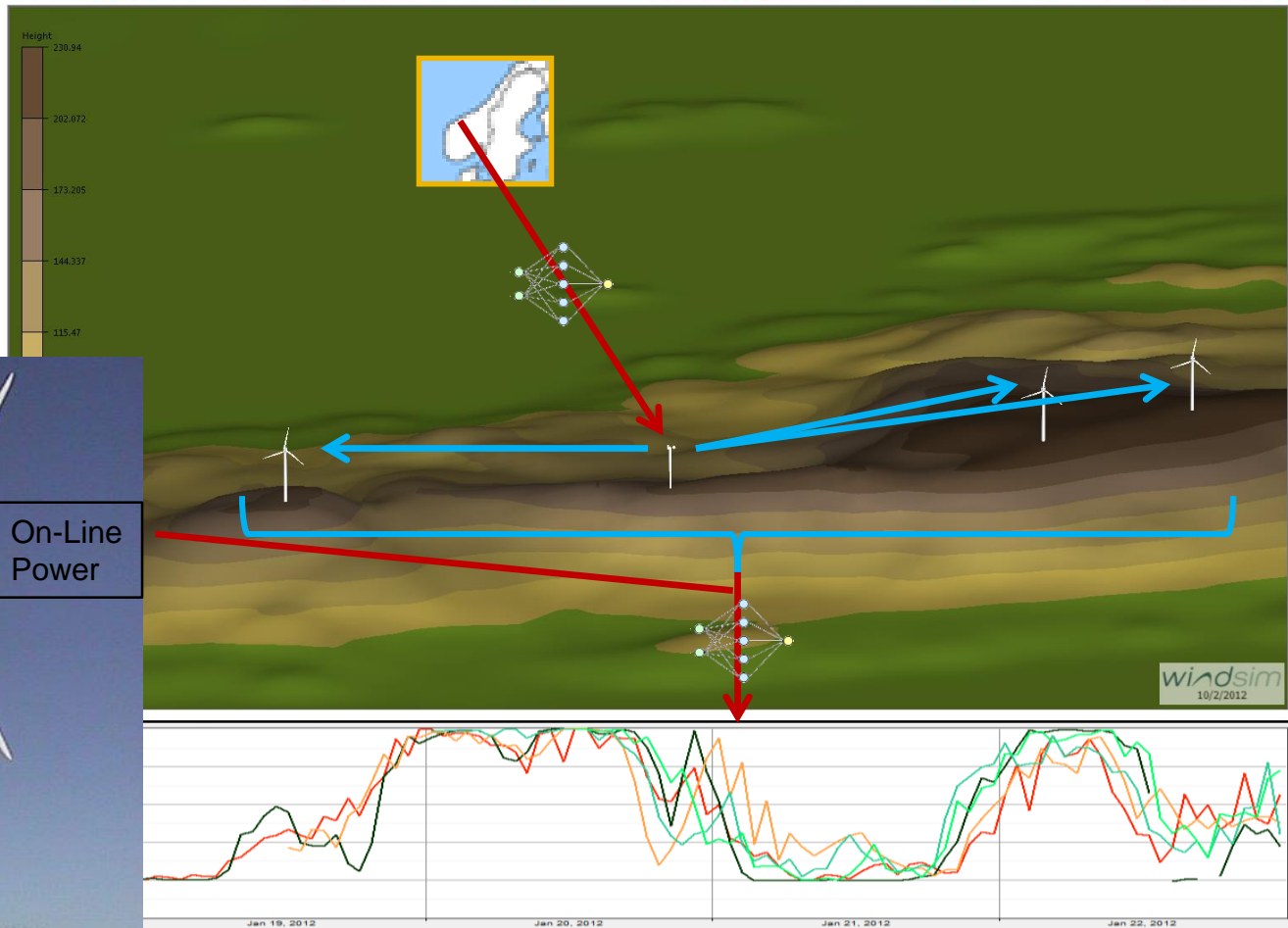
# WindSim Forecasting



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