

# Spatio-temporal ensemble predictions for wind and solar energy combining dispersion modelling methods and machine learning

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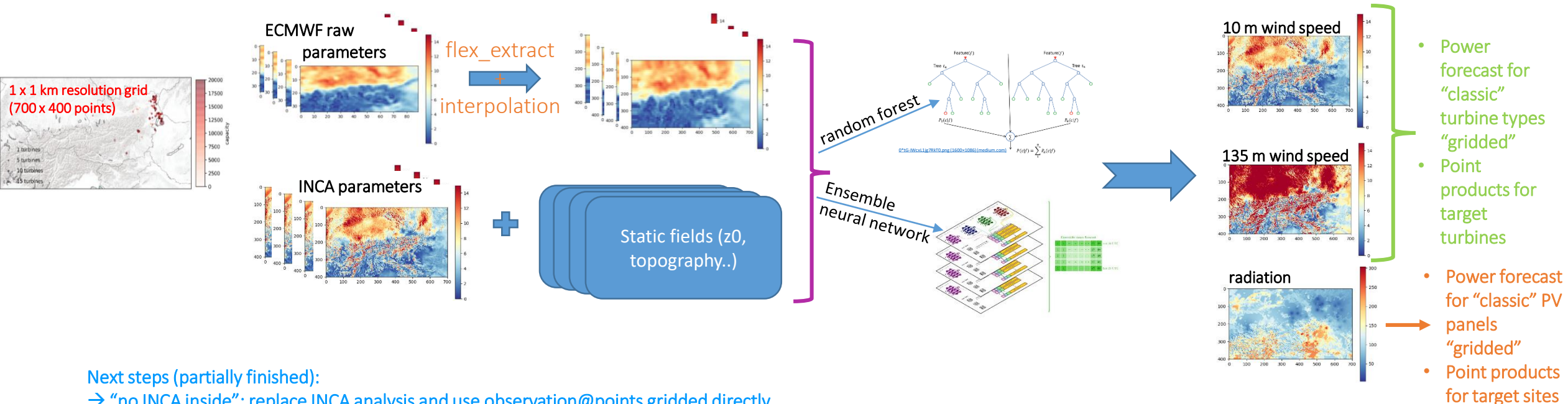
## Introduction

To tackle the need for targeted and accurate ensemble predictions post-processing of NWP data is needed. Ideally, one would use the full NWP resolution i.e. the model levels especially for wind energy prediction and instantaneous fluxes for solar energy production. Both can be tackled by using the flex\_extract tool. Here, flex\_extract, neural networks and random forests are used for a pre-study of gridded probabilistic predictions of wind speed and radiation for Austria.

## Spatio-temporal machine learning (ensemble)

Domain:

Method:



Next steps (partially finished):

- “no INCA inside”: replace INCA analysis and use observation@points gridded directly
- add ECMWF EPS plus flex\_extract for every ensemble member
- tune neural network / look into extra layers (attention layer)
- tune random forest
- evaluate against point observations of turbines/pv panels
- in-depth spatio-temporal evaluation for at least one years period
- Incorporating point observations of renewables