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## VARIABILITY OF LONG TERM ESTIMATES OF HYDRO POWER GENERATION ON A EUROPEAN SCALE

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► **To cite this version:**

Valentina Sessa, Edi Assoumou, Sílvia Carvalho. VARIABILITY OF LONG TERM ESTIMATES OF HYDRO POWER GENERATION ON A EUROPEAN SCALE. Internation Conference on Applied Energy, Aug 2019, Vasteras, Switzerland. <hal-02317459>

**HAL Id: hal-02317459**

**<https://minesparis-psl.hal.science/hal-02317459v1>**

Submitted on 16 Oct 2019

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# VARIABILITY OF LONG TERM ESTIMATES OF HYDRO POWER GENERATION ON A EUROPEAN SCALE

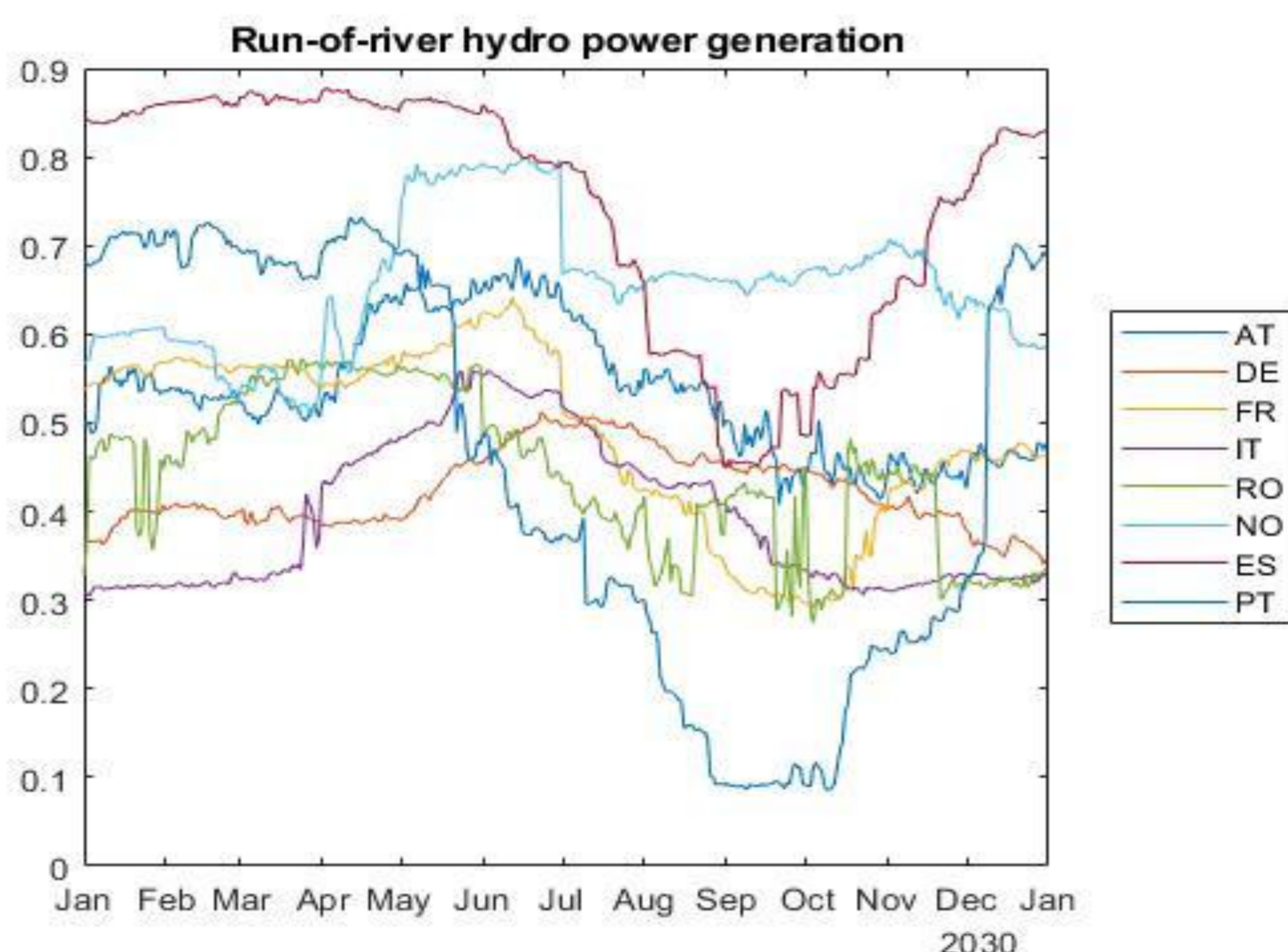
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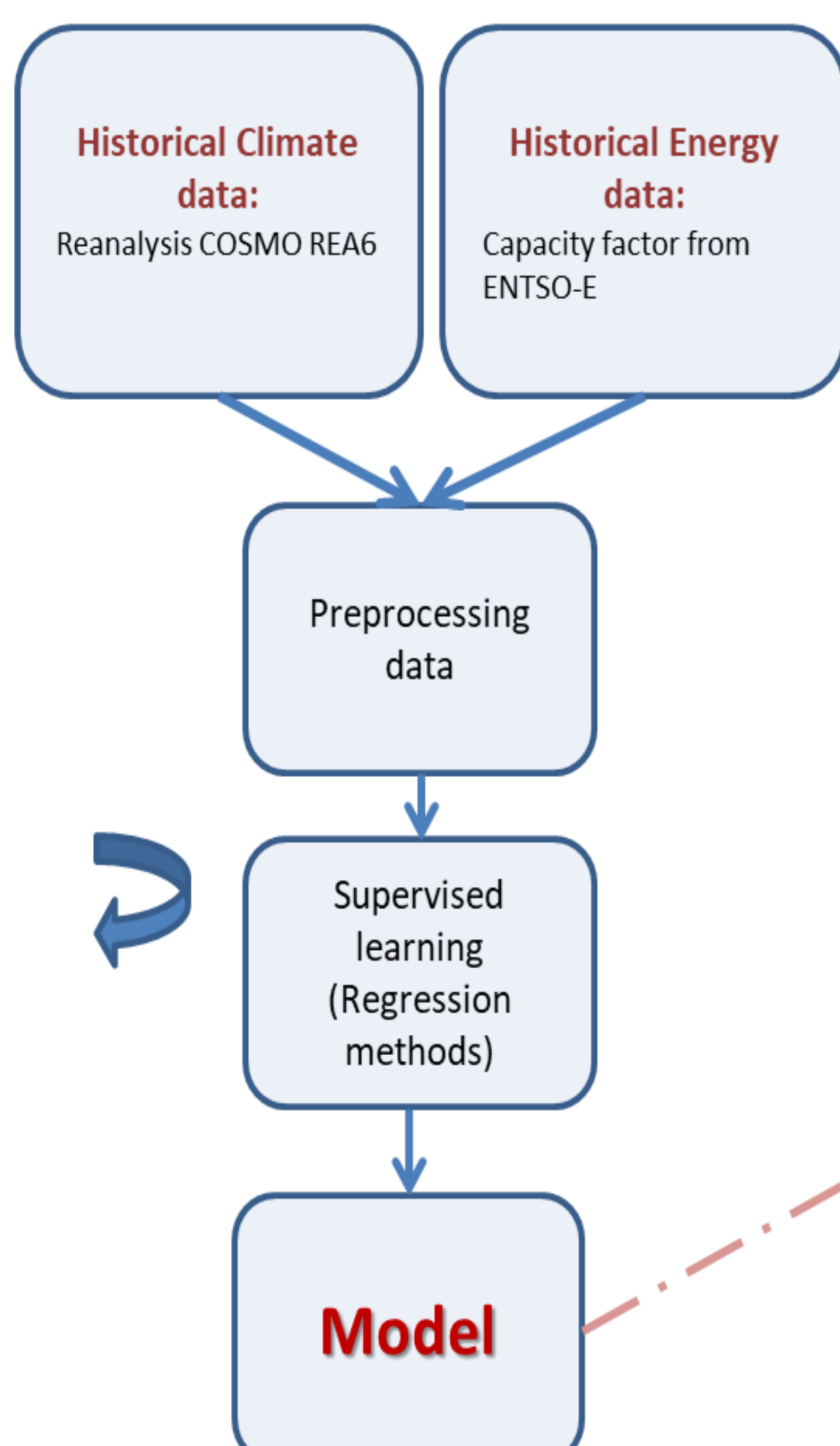
- Hydropower is the world's most dominant (86%) source of renewable electrical energy.
- It strictly depends on the geography and weather peculiarity of locations where power plants are settled.
- We use machine learning techniques for producing long term estimates of hydro power capacity factors for all European countries based on future climate scenarios.

Estimated capacity factor of run-of-river hydro power generation over 2030.

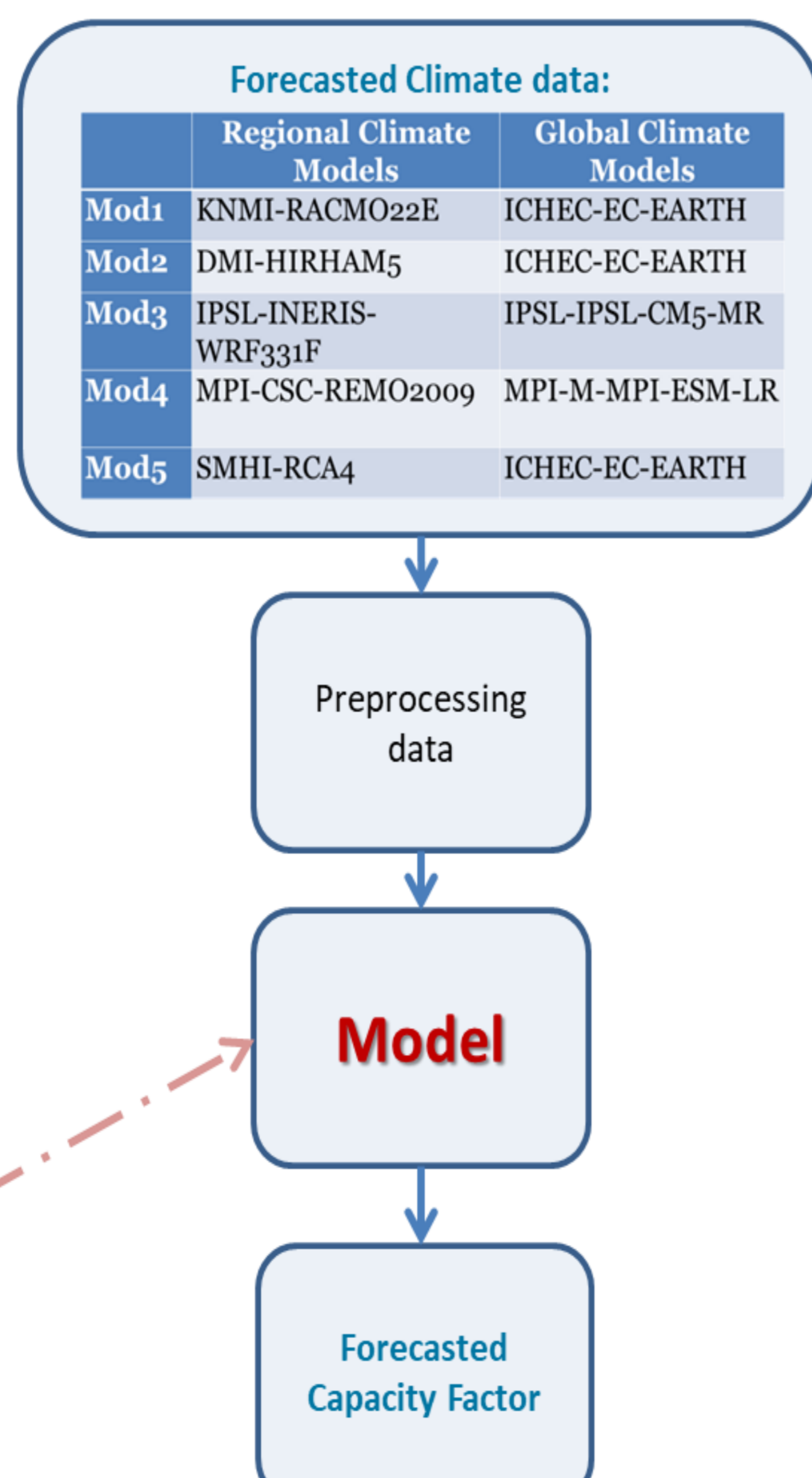


## METHODOLOGY

### Training

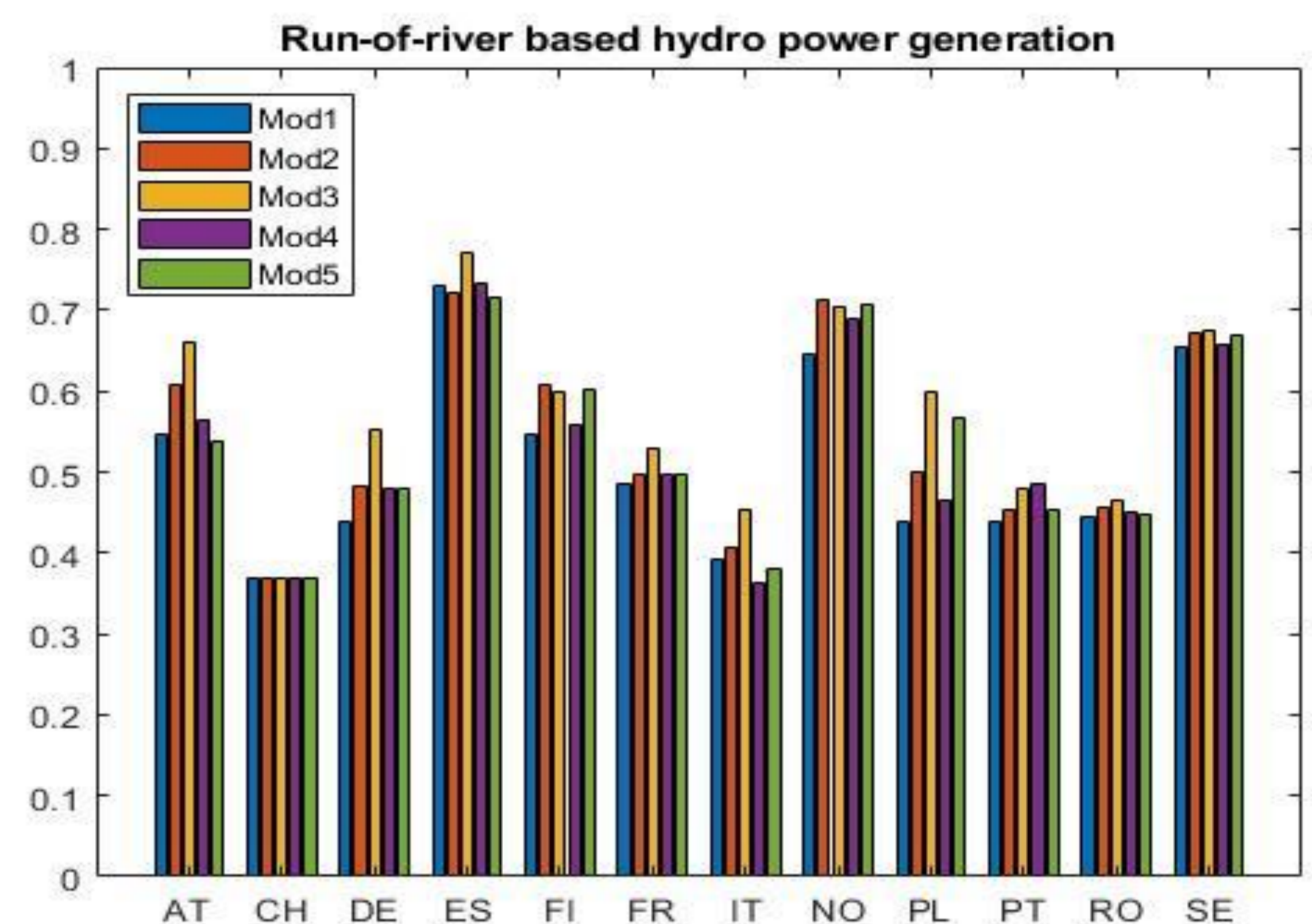


### Prediction

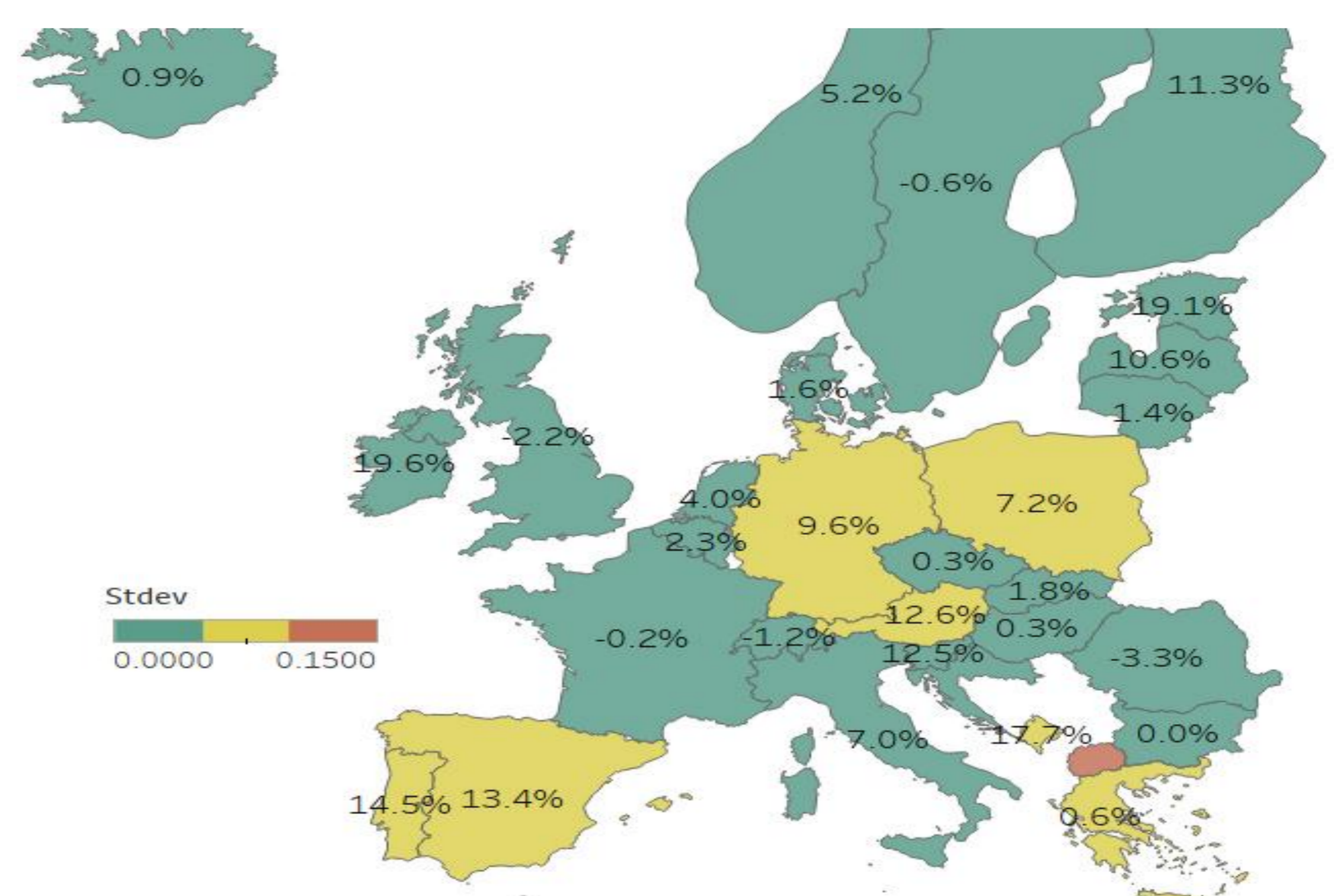


## RESULTS

Annual mean of HP generation obtained by considering the five climate models over the year 2050.



Anomalies in the run-of-river HP generation for the year 2050 (winter period DJF).



Variability of capacity factor over 20 years around 2050 for Portugal.

