

Nowcasting

Weather Forecasting

Sub-
seasonalSeasonal
Forecasting

Climate Projections

1000 km

100 km

10 km

1 km

Seconds

Minutes

Hours

Days

Weeks

Months

Years

Decades

Centuries

Temporal Scales

ClimSim
*Yu et al. (2023)*PanguWeather
*Bi et al. (2023)*RainBench
*Schroeder de Witt
et al. (2021)*WeatherBench
*Rasp et al. (2020)*FourCastNet
*Pathak et al. (2022)*DLWP
*Weyn et al. (2022)*UNet++
*Unal et al. (2023)*ClimaX
*Nguyen et al.
(2023)*deCNN
*Nielsen et al. (2022)*AtmoRep
*Lessig et al. (2023)*GraphCast
*Lam et al. (2023)*FengWu
*Chen et al. (2023)*FuXi
*Chen et al. (2023)*ClimateLearn
*Nguyen et al. (2023)*SNFO
*Bonev et al. (2023)*ClimateSet
*Kaltenborn et al. (2023)*ClimateLearn
*Nguyen et al. (2023)*ClimateBench
Watson-Parris et al. (2022)

Legend

ML model
based on:reanalysis
data (past)climate data
(future)

1 ESMs

< 5 ESMs

> 10 ESMs

ML dataset
based on:reanalysis
data (past)climate data
(future)

1 ESMs

< 5 ESMs

> 10 ESMs