

1. Systematic difference “delta ”

Modis = a* NEX + b

Use Intercept b to estimate systematic difference

– Seasonal (DecJanFeb, MarAprMay, JuneJulyAug, SepOctNov)

Modis _CA_DecJanFeb = a* CMCC-ESM2 SSP126 DecJanFeb 2015 - 2020 CA + b

33 = a (coefficient) * 25 + b (intercept)

2. Confidence interval of intercept

Formula

$$CI = \bar{x} \pm z \frac{s}{\sqrt{n}}$$

CI = confidence interval

\bar{x} = sample mean

z = confidence level value

s = sample standard deviation

n = sample size

Sample mean = Average intercept across 32 models for SSP 126 at CA

Sample standard deviation =

Sample size =

Confidence level = 95% or 99%

Procedures

1. Monthly Dataset to seasonal dataset for both MODIS and NEX (eg: 6年的Dec Jan Feb 放一个dataset)
2. 用三个月的数据fit model 算intercept
3. 95% CI for intercept
4. Repeat for 32 models * 2 scenarios * 4 regions = 256 个intercept
5. Excel table