

“海洋要素计算”-编程作业2part1

2023年春季学期

一元线性回归的应用



要求:

1. Regression distributions of monthly surface sea temperature (SST) on the PDO index (1900-2020)

Region: 40S-70N;120E-60W

2. Regression distributions of global monthly sea level pressure (SLP) on the PDO index (1900-1990)

Region: 40S-70N;120E-60W

3. Regression maps of surface sea temperature (SST) in January-February-March (JFM) onto PDO JFM in P1(1958–1994) and P2 (1995–2017). Region: 20N-70N;110E-100W

数据:

1. 自行下载monthly SST数据

HadISST (<https://www.metoffice.gov.uk/hadobs/hadisst/>)

ERSST5(<https://psl.noaa.gov/data/gridded/data.noaa.ersst.v5.html>)

自行下载monthly SLP数据

NOAA(<https://psl.noaa.gov/data/gridded/data.noaa.erslp.html>)

2. 自行下载monthly PDO index数据

from NOAA (<https://www.ncei.noaa.gov/access/monitoring/pdo/>)

Tips:



- The PDO is defined as the pattern and time series of leading EOF of monthly SSTAs over the North Pacific (north of 20N), after removing the global mean SST anomaly (Mantua et al., 1997; Deser et al., 2004).

reference: <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/pacific-decadal-oscillation>

- 明确研究区域，研究变量，研究时间段
- 思考回归分析的意义