

层次level



气象科研绘图6：垂直剖面图

1991-2020年1月平均垂直温度剖面图（120E）

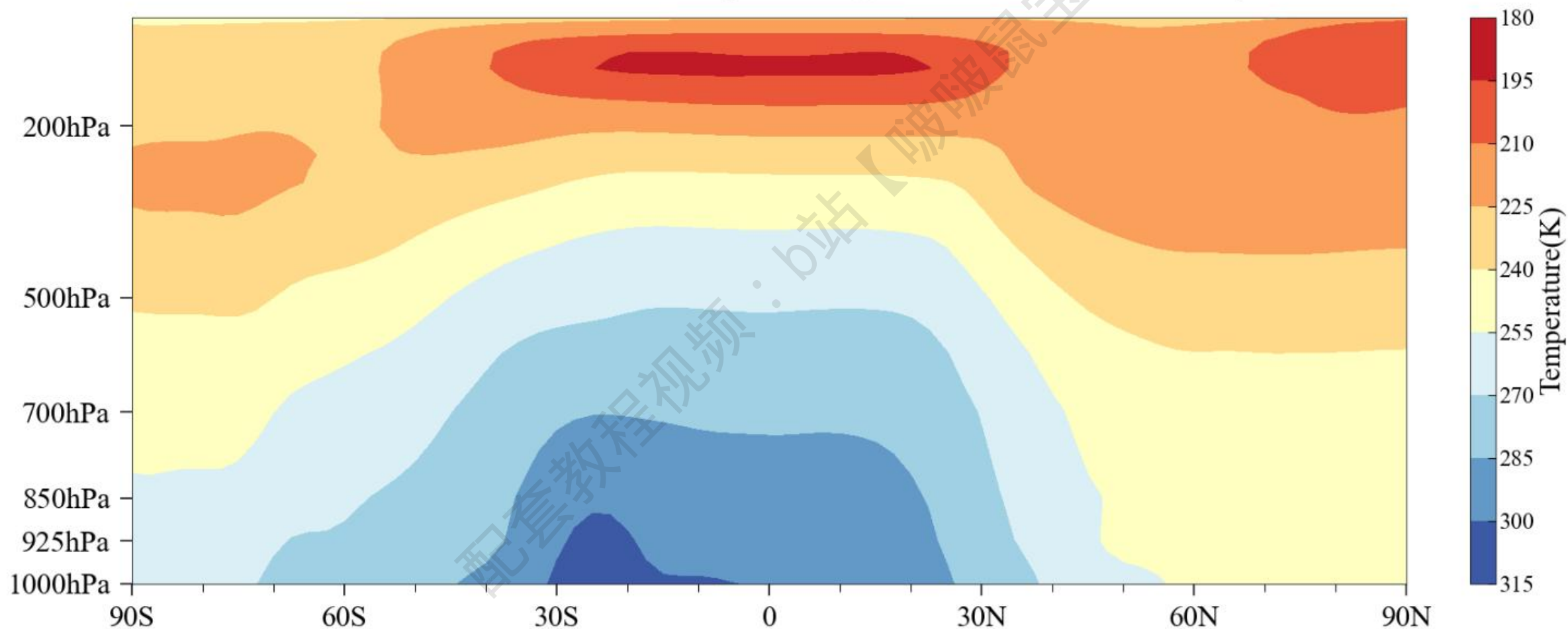
1991-2020 Vertical mean temperature profile of 120E in January



python™

1991-2020年1月平均垂直温度剖面图 (120E)

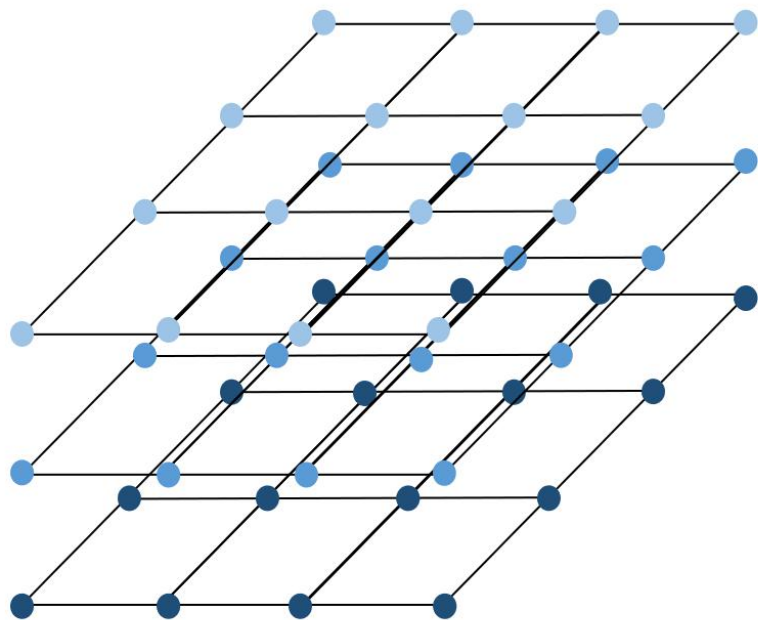
1991-2020 Vertical mean temperature profile of 120E in January



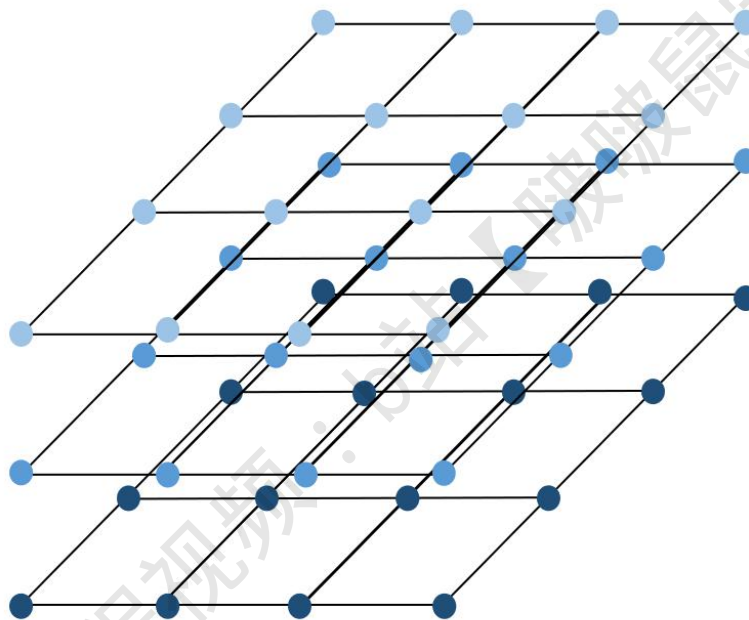
查看nc文件信息 (xarray)

```
<xarray.Dataset>
Dimensions:                (level: 17, lat: 73, lon: 144, time: 12, nbnds: 2)
Coordinates:
  * level                   (level) float32 1e+03 925.0 850.0 ... 30.0 20.0 10.0
  * lat                     (lat) float32 90.0 87.5 85.0 82.5 ... -85.0 -87.5 -90.0
  * lon                     (lon) float32 0.0 2.5 5.0 7.5 ... 352.5 355.0 357.5
  * time                    (time) object 0001-01-01 00:00:00 ... 0001-12-01 00:0...
Dimensions without coordinates: nbnds
Data variables:
  climatology_bounds      (time, nbnds) datetime64[ns] ...
  air                     (time, level, lat, lon) float32 ...
  valid_yr_count          (time, level, lat, lon) float32 ...
Attributes:
  Conventions:            CF-1.0
  title:                  Monthly NCEP/DOE Reanalysis 2
  comments:               Data is from \nNCEP/DOE AMIP-II Reanalysis...
  platform:               Model
  source:                 NCEP/DOE AMIP-II Reanalysis (Reanalysis-2...
  institution:            National Centers for Environmental Predic...
  dataset_title:          NCEP-DOE AMIP-II Reanalysis
  References:             https://www.psl.noaa.gov/data/gridded/dat...
  source_url:             http://www.cpc.ncep.noaa.gov/products/wes...
  history:                Created 2022/01/11 by doMonthLTMNC4
  not_missing_threshold_percent: minimum 3% values input to have non-missi...
```

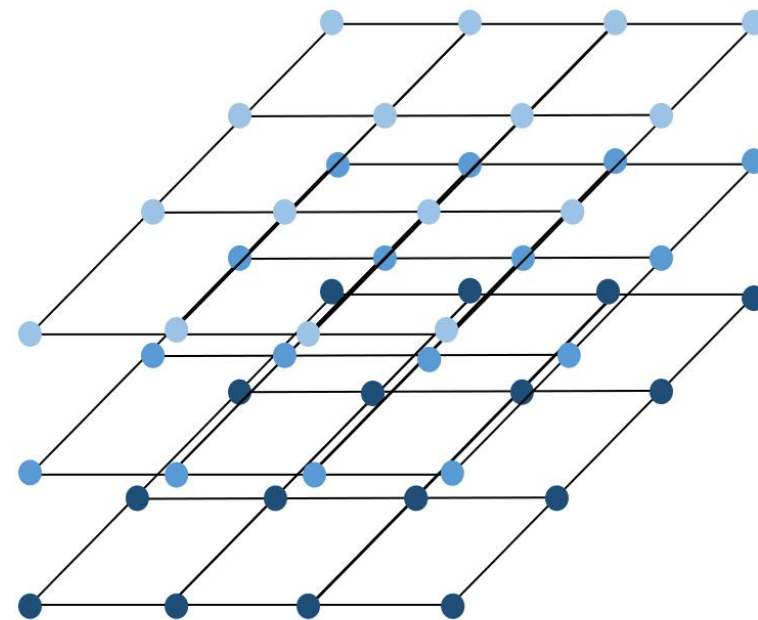
变量空间分布场 $\text{air}(\text{time}, \text{level}, \text{lat}, \text{lon})$



t_0 时刻



t_1 时刻



t_2 时刻

取 $t=t_0$ $\text{air0}(\text{level}, \text{lat}, \text{lon})$

层次
level

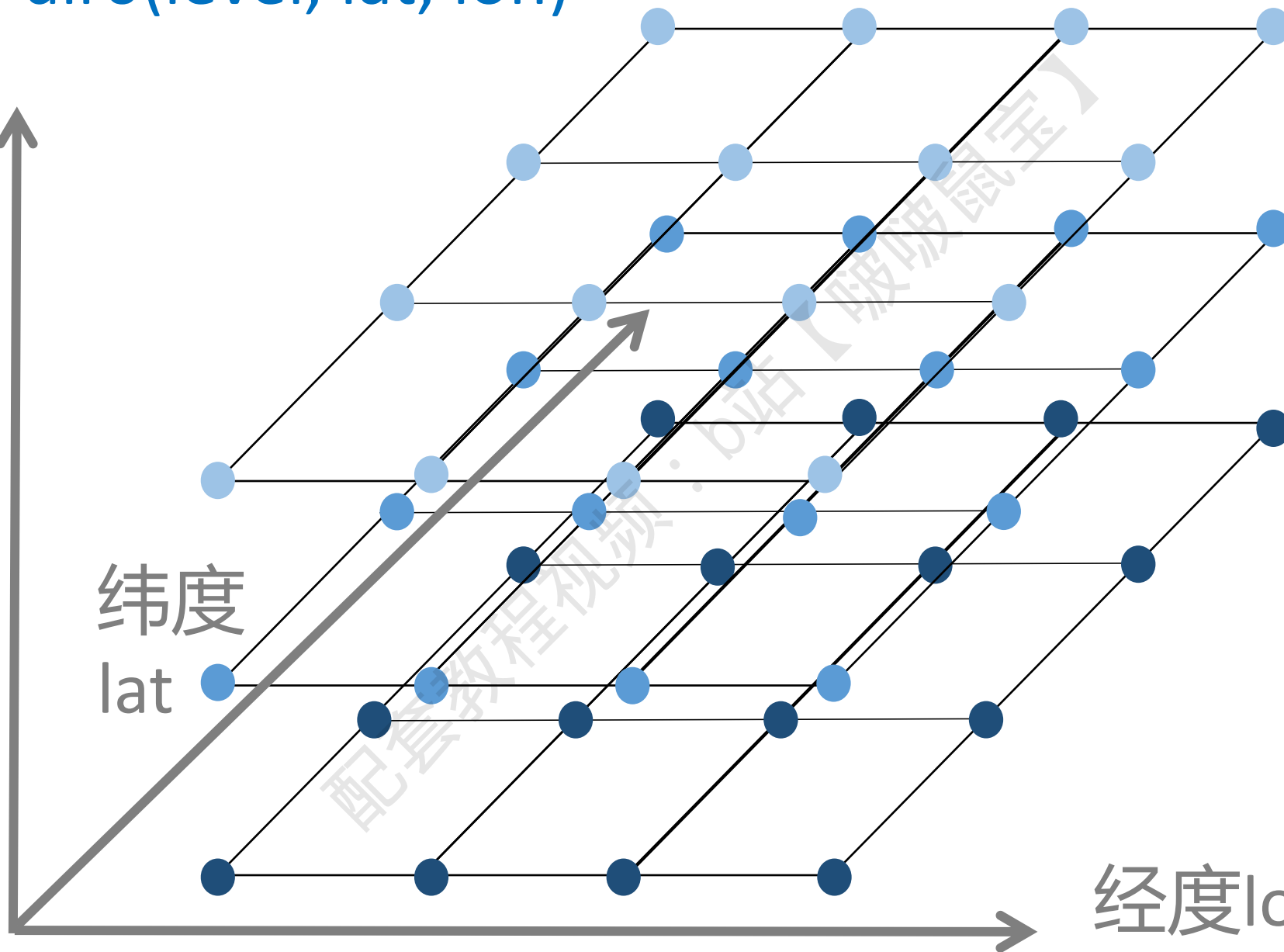
纬度
lat

经度lon

800hPa

925hPa

1000hPa



取lon=120 air00(level, lat)

层次
level

纬度
lat

800hPa

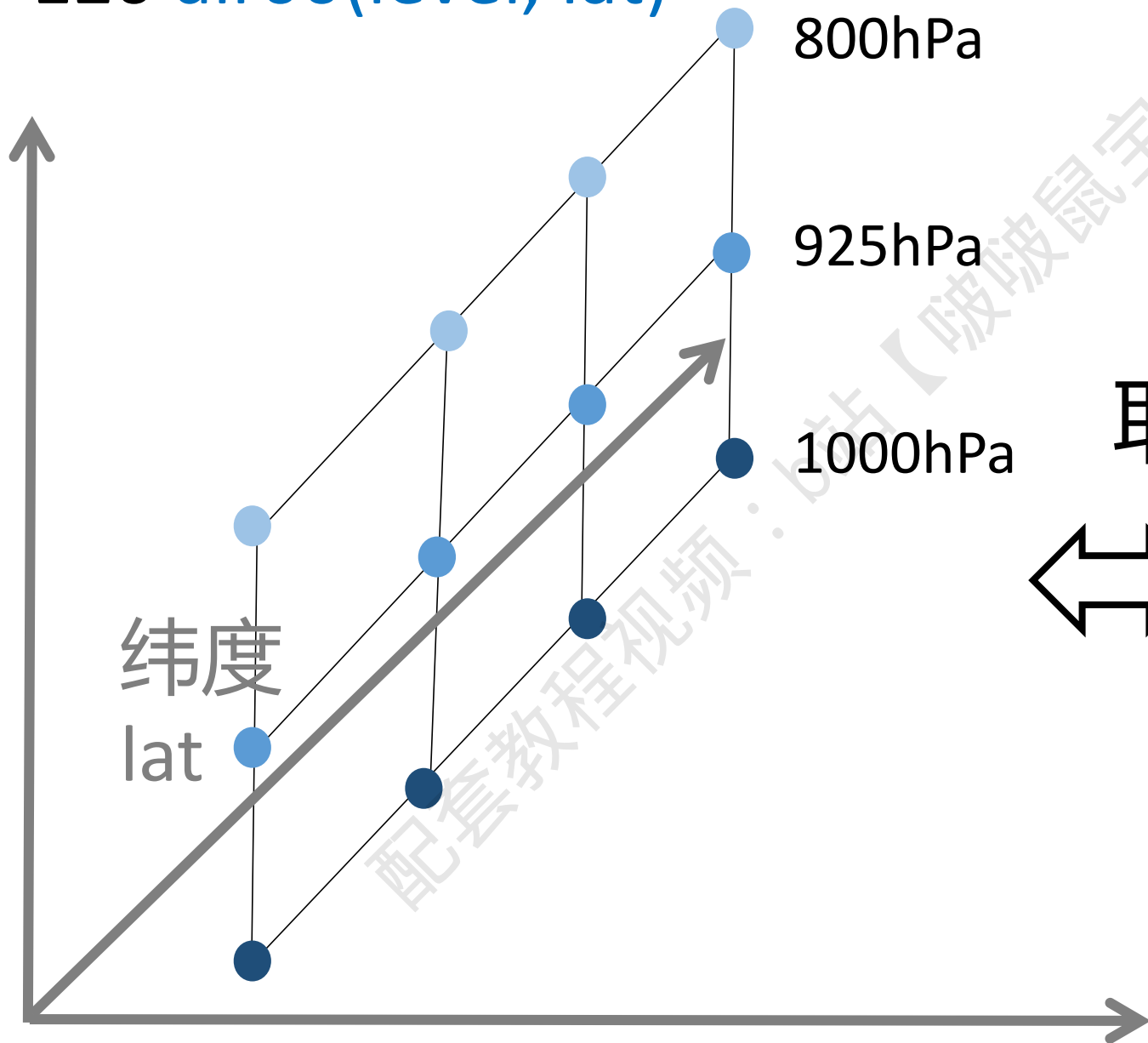
925hPa

1000hPa

取lon=lon0

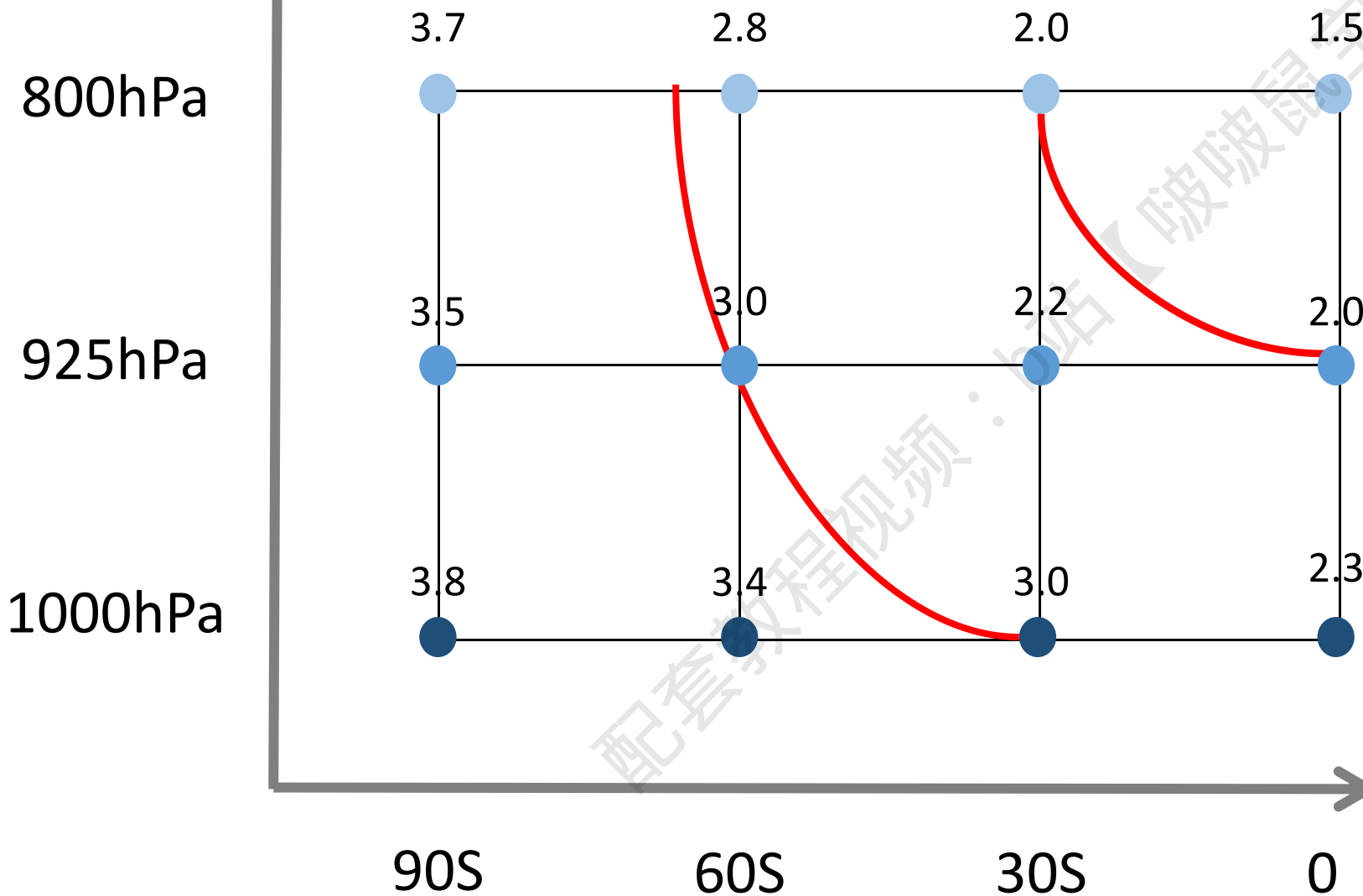
⇔ 沿lon0经线切开

经度lon



层次
level

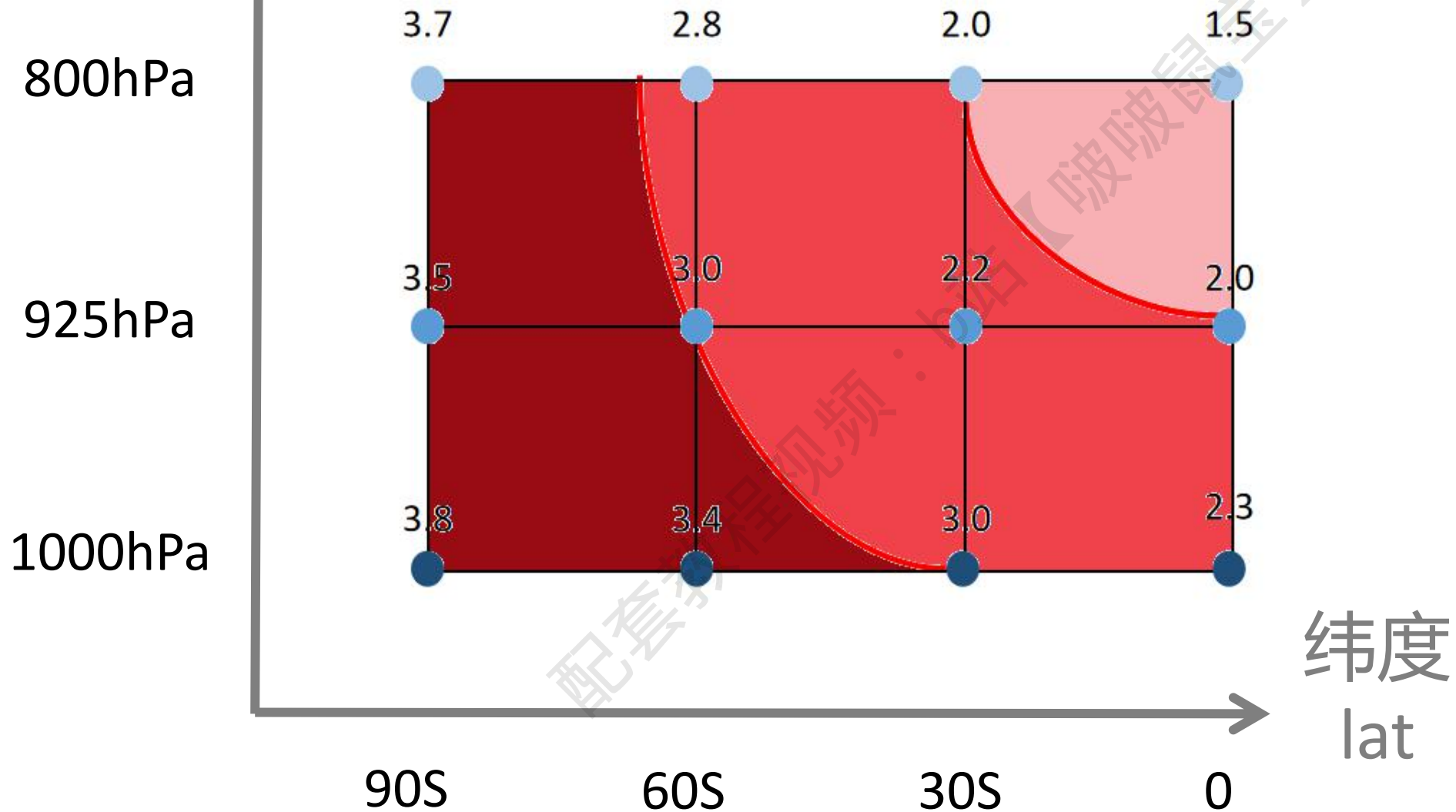
垂直剖面图-等高线图contour



纬度
lat

层次
level

垂直剖面图-等高线填色图contourf



层次
level

垂直剖面图-风场图quiver/barbs

800hPa

925hPa

1000hPa

90S

60S

30S

0

纬度
lat

