

Input a temperature profile and latitude.

Identify all PTH(s) within the height interval $[TH_{min}, TH_{max}]$.

The number of PTH(s) ?

= 1

= 0

> 1

Record the minimum and maximum values of PTHs as PTH_{min} and PTH_{max} respectively. And perform bi-Gaussian function fitting on temperature T in the interval $[PTH_{min} - 2, PTH_{max} + 2]$.

Solve the local minimum value of the fitting curve, denote $e1$ and $e2$ (where $e1 < e2$).

The height of $e1$ and $e2$?

Case 1

Case 3

Case 2

The number that passes the significance test equals 0 ?

Yes

No

The number that passes the significance test equals 1 ?

Yes

No

Missed detection

Single tropopause (ST).
STH is PTH.

Single tropopause (ST).
STH is the PTH, closest to $e1$.

Single tropopause (ST).
STH is the PTH, closest to $e2$.

Double tropopause (DT).
DTH1 and DTH2 are the PTHs,
closest to $e1$ and $e2$,
respectively.