Start
P and Z files are ready
in the input directory

↓

Height levels [prep1]
Transform from ECMWF hybrid vertical grid to a stack of equi-distant vertical height levels

P,Z → H

↓

Quasi-cartesian coordinate system [prep2]
Rotate from geographical latitude/longitude to quasi-cartesian x/y coordinate system

H → R

↓

Secondary fields [prep3]
Calculate Ertel's PV, potential temperature, density and squared Brunt-Vaisala frequency

R → R

↓

Modified Ertel's PV [prep4]
Define the modified and anomaly Ertel's PV and the boundary conditions for wind and potential temperature

R → R

↓

Split the file [prep5]
Split the file into four different files (Original ORG, Modified MOD, Anomaly ANO and Reference REF)

R → ORG, MOD, ANO, REF

↓

Reference profile [prep6]
Calculate the reference profile of pressure, density, potential temperature, squared Brunt-Vaisala frequency

MOD → REF

↓

Coastlines [prep7]
Write the coastlines for the quasi-cartesian coordinate system ton the reference file

→ REF

↓

Transfer to run directory [prep8]
The ORG, MOD, ANO and REF files are moved from the input directory to the run directory

↓

End
ORG, MOD, ANO and REF are ready for inversion in the run directory