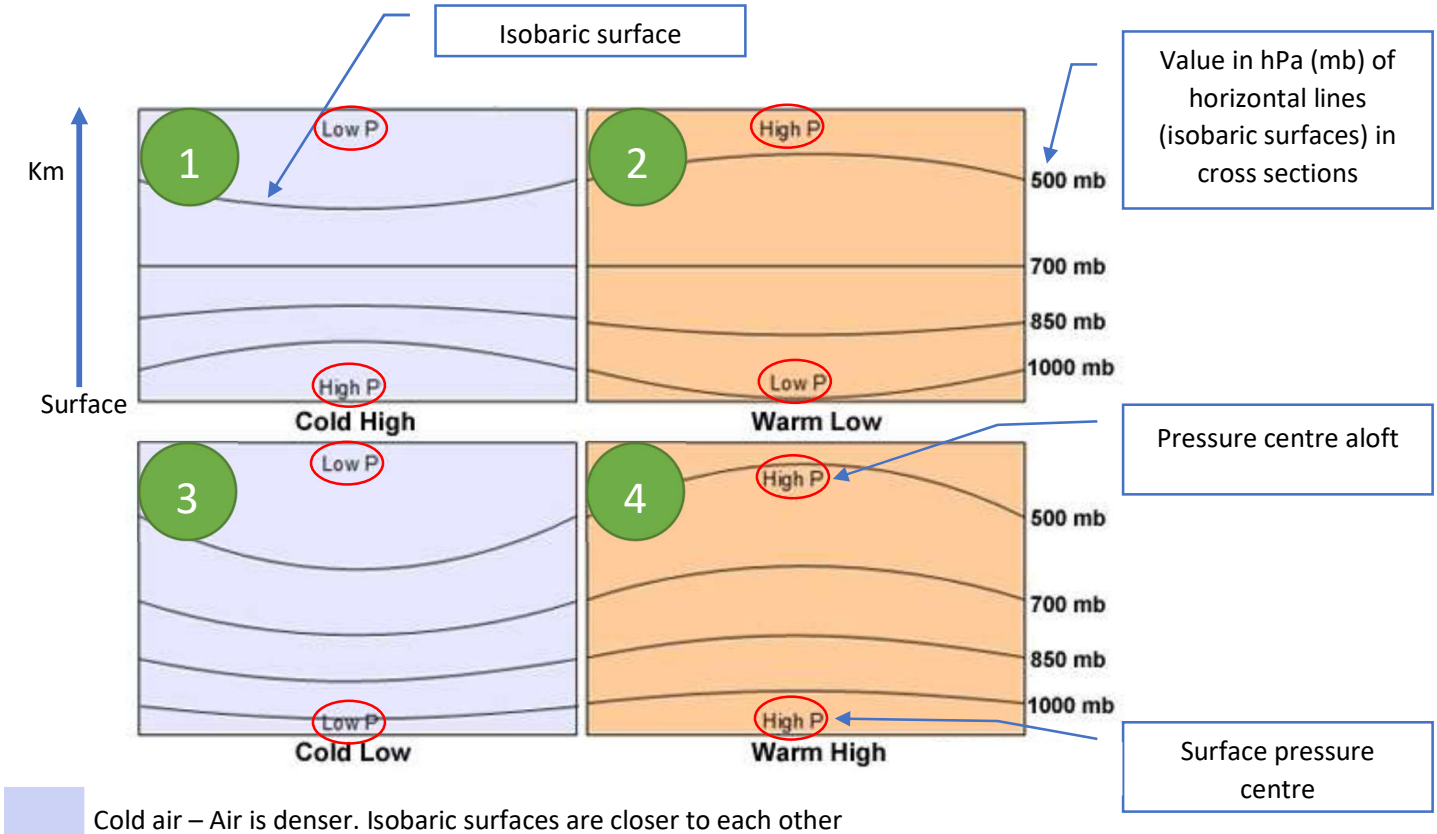
This image shows schematic cross sections of the relationship between surface pressure, temperature and pressure aloft (in high levels of troposphere).

Pressure centres delimited by red ovals.

High pressure – Pressure decreases outwards from centre.

Low pressure – Pressure increases outwards from centre



Cold air – Air is denser. Isobaric surfaces are closer to each other

Warm air – Air is less dense. Isobaric surfaces are away from each other

1 **Cold High** pressure (cold anticyclone) - High pressure at surface, associated with cool temperatures (Cold High) cannot be sustained with height. As this schematic shows, pressure falls rapidly with height resulting in low pressure aloft. **Isobaric surfaces bulge up in lower levels and bulge down aloft.**

2 **Warm Low** pressure- Low surface pressure associated with warm temperatures (Warm Low) cannot persist high in the atmosphere. This is true for the Equatorial trough and tropical cyclones. High pressure in higher levels. **Isobaric surfaces bulge down in lower levels and bulge up aloft.**

3 **Cold Low** pressure - Low surface pressure associated with cool temperatures (Cold Low) can persist high in the atmosphere. This is true of many cold-core mid-latitude cyclones, associated, for example with active frontal systems. **Isobaric surfaces bulge down in all levels.**

4 **Warm High** pressure - High surface pressure associated with warm temperatures (Warm High) will persist high in the atmosphere. **Isobaric surfaces bulge up in all levels.**