

What causes the ozone hole?

Theories

- **Dynamical theory (Tung et al., 86)**
vertical lifting of low ozone from lowest stratosphere and troposphere. Invalid N_2O from ER_2 during AAOE show low values associated with O_3 loss.
- **Solar theory (Callis and Natarajan, 86)**
production of reactive nitrogen (NO_x). Invalid ER_2NO_x measurements, ozone hole should have disappeared in late 80s.
- **Heterogeneous Chemistry (Solomon et al., 86; McElroy et al., 86a; Toon et al., 86; Crutzen and Arnold, 86; McElroy et al., 86b)** heterogeneous chemical processes free Cl from reservoir species via reactions on surfaces of PSCs.