

# Gyromagnetic Radiation

- Non-relativistic particles ( $\gamma \approx 1$ ):  
gyro-resonance (or cyclotron) radiation  
diagnose B in ARs
- Mildly relativistic particles ( $1 \approx \gamma \approx 3$ ):  
gyro-synchrotron radiation  
flare-accelerated electrons  
diagnose B in flare loops
- Ultra relativistic particles ( $\gamma \gg 1$ ):  
synchrotron radiation  
more relevant to cosmic sources  
sub-THz flare component

where  $\gamma$  is the Lorentz factor:  $\gamma = (1 - v^2/c^2)^{-0.5}$

# gyro-resonance

# synchrotron

