Derivation of the Rydberg Constant

An introduction to the Bohr Model of the Atom











Newtonian mechanics













Bohr Postulate

Electrons in a stable orbit do not radiate.
That is, atoms are stable and do not collapse.

Electrons in transition from a higher to a lower energy state radiate a photon of energy hf.







General formula for the radius















Limitations of the Bohr Model

Works well for hydrogen, and for other single electron atoms, but not as well for helium and even less well for other atoms

Based upon postulates that angular momentum is quantized