



Bremsstrahlung

Bremsstrahlung in this theory is the very same as in other theories, yet this theory has an explanation for Synchrotron radiation which is directed (almost) tangential to the speed-vector although Bremsstrahlung is known to radiate only in the direction of acceleration:

- in this Theory the electron flying in a circle is accelerated towards the center of the circle
- Bremsstrahlung is emitted into the direction of the center of the circle
- when the electron has high speeds (e.g. 100 times c), then according to emission theory the radiation flies 100 times faster in the moving direction than in direction of the center which gives the well known cones in flying-direction

So without emission theory Bremsstrahlung is simply in direction of the acceleration, compare figure 1:

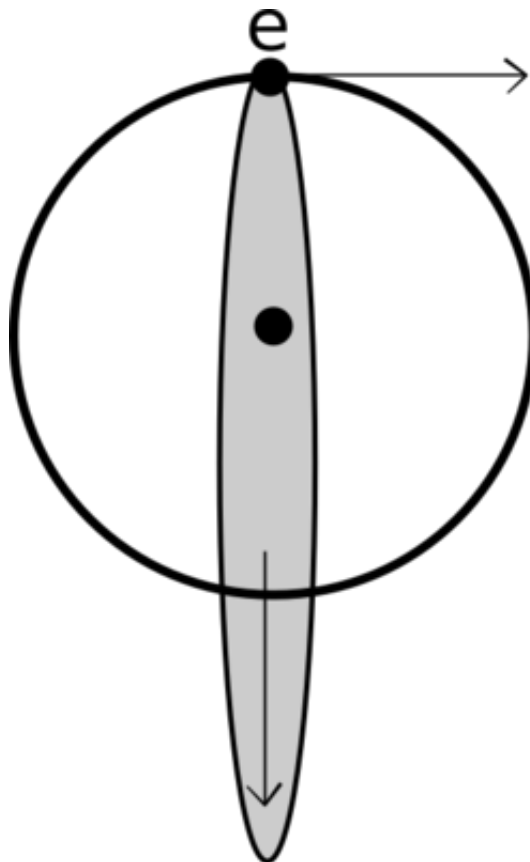


Figure 1

With the electron at the speed of c the resulting direction is the moving velocity-vector added to the emission direction to the center as demonstrated in figure 2, resulting in a 45 degree direction.

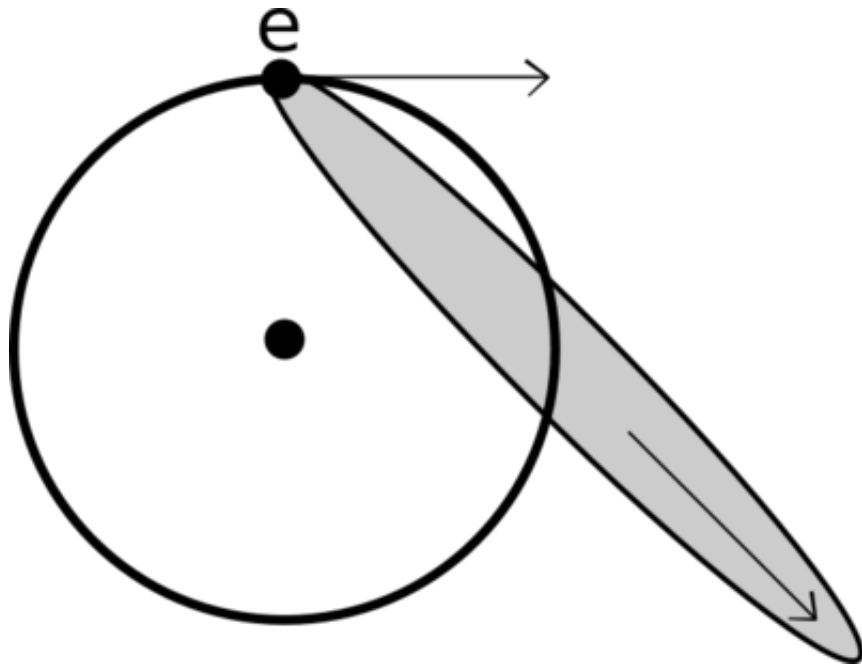


Figure 2

So for speeds of the electron much faster than c the resulting direction of the emitted Bremsstrahlung is almost in the direction of the electron as seen in figure 3:

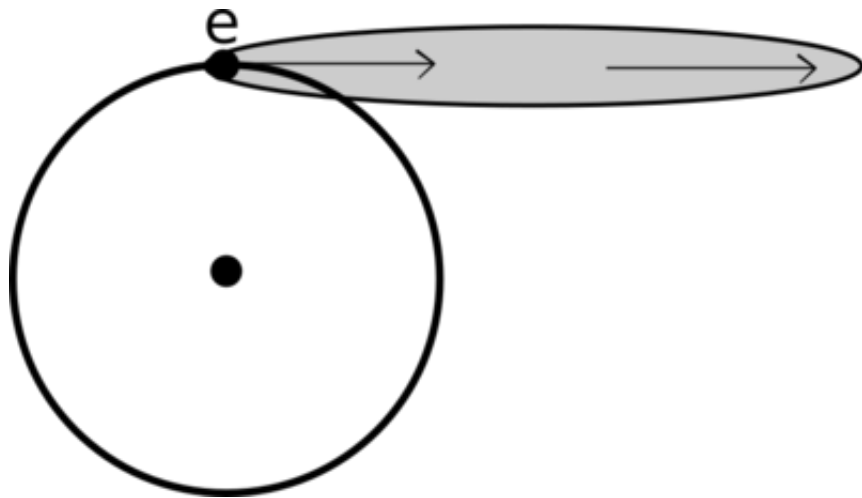


Figure 3

This explains Synchrotron radiation.

Of course, the emitted Bremsstrahlung from the view point of the electron itself is simply c in the direction of acceleration. Observers then see this pattern called synchrotron radiation.

- Copyright © 2015-2017 Kechel