Quiz 9 (Oct. 24, 2013)

Name:

1 How does power scale under Lorentz transformations (i.e. versus γ)?

2 In the electron's (instantaneous) rest frame, what causes the acceleration that gives rise to synchrotron emission in the lab frame?

3 Draw a picture of the frequency power spectrum of synchrotron emission from a single electron.

4 Assume electrons are distributed versus energy as E^p with p in the range described in the video. Is the scaling of the frequency spectrum versus ν steeper or shallower than p? What is the underlying reason for the change in spectral index?