4.1: Introduction

In previous chapters we have used the definitions and symbols of the quantities in radiation theory as recommended by various bodies. We mentioned that, in the context of the special needs of stellar atmosphere theory, usage sometimes differs from the standard. In this chapter we introduce the definitions and symbols that are commonly used in stellar atmosphere theory, and we continue to use the astronomical usage henceforth.

In a later paragraph you will be asked to imagine a "horizontal" surface in the atmosphere of a star. Lest you are thinking of a star as a large, ball-shaped thing, and the word "horizontal" is puzzling, let me say that, at least for the time being, I am considering a "shallow" atmosphere; that is, an atmosphere whose depth is very small compared with the radius of the star. To that extent, the atmosphere can be considered as a plane parallel atmosphere. This will not do for a greatly extended atmosphere, such as that of an M supergiant; as to whether it is an appropriate model for a star like the Sun, remind yourself how sharply-defined the limb of the Sun is, and hence how rapidly the atmosphere becomes opaque.