= tthen in the past and a distant position r =
R. Integrating over the path in both space and time that the light wave travels yields :
<formula>
In general , the wavelength of light is not the same for the two positions and times considered due to the changing properties of the metric . When the wave was emitted , it had a wavelength ?then . The next crest of the light wave was emitted at a time
<formula>
The observer sees the next crest of the observed light wave with a wavelength ?now to arrive at a time
<formula>