

In the present work we describe different cosmic systems that contain the compact objects (neutron stars or black holes). The accretion of the matter on the compact object is a main source of the radiation and that is why we consider several models of accretion. The energy of emitted radiation is different from the observed energy due to the gravitational redshift and the Doppler shift. We are interested in the minimum and maximum values of this change of emitted radiation. We show how to calculate these extremes in Kerr metric by the help of the elliptic integrals assuming that the emission radius, the angular momentum of black hole, and the inclination angle of the observer are given.