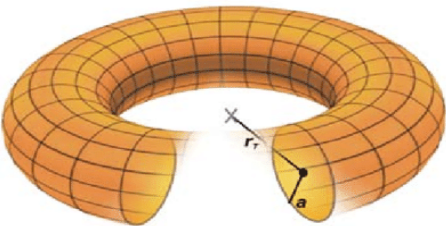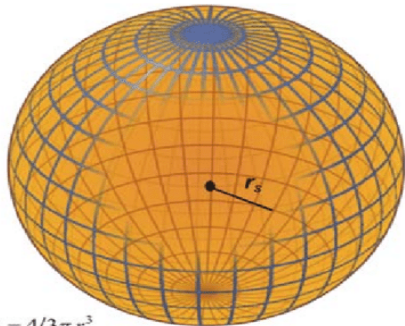$$V_T = 2\pi^2 r_T a^2$$

$$S_T = 4\pi^2 r_T a$$

$$V_S = 4/3\pi r_s^3$$

$$S_S = 4\pi \ r_s^2$$