

$$P_{25}(r) = r^2 \cdot R_{25}(r)^2 = \frac{1}{8} a^{-3} \left(2 - \frac{r}{a}\right)^2 e^{-r/a} \cdot r^2 \quad r = a\rho \approx a_0\rho$$

$$P_{25}(\rho) = \frac{1}{8a} (2-\rho)^2 \rho^2 e^{-\rho}$$

$$8a P'_{25}(\rho) = [2\rho(2-\rho)^2 - 2(2-\rho)\rho^2 - \rho^2(2-\rho)^2] e^{-\rho}$$

$$= \rho(2-\rho) [2(2-\rho) - 2\rho - \rho(2-\rho)] e^{-\rho} = \rho(2-\rho) e^{-\rho} (\rho^2 - 6\rho + 4) = 0$$

at $\rho = \frac{6 \pm \sqrt{20}}{2} \approx 5.24$ or 0.76 . P_{25} is larger at 5.24 so

$$r = 5.24 a \approx 5.24 a_0.$$