- The radial motion is parametrized by

$$r \;=\; a_r \left(1 - e_r \cos u\right)$$

⋆ a_r and e_r are 3PN accurate semi-major axis & 'radial eccentricity'.

These are expressible in terms of orbital energy E, angular momentum L and m_1 and m_2.

⋆ u is the eccentric anomaly.