$$\frac{\partial H}{\partial \mathbf{p}_a} = \dot{\mathbf{x}}_a = \frac{\mathbf{p}_a}{m_a} - \frac{p_a^2 \mathbf{p}_a}{2m_a^3 c^2} - e_a \sum_{b \neq a} \frac{e_b}{R_{ab}} \frac{1}{2m_a m_b c^2} \left[\mathbf{p}_b + (\mathbf{p}_b \cdot \hat{\mathbf{n}}_{ab})\, \hat{\mathbf{n}}_{ab}\right] - \left(\frac{e_a}{m_a c^2}\right) \frac{\mathbf{m} \times \mathbf{x}_a}{x_a^3}$$