

Rel. acceleration associated with $H_{2.5\text{PN}}^{\text{int}}$ and $H_{3.5\text{PN}}^{\text{int}}$

$$\begin{aligned}
 \mathbf{a} = & -\frac{GM}{r^2} \mathbf{n} + \frac{1}{c^2} \left\{ \frac{GM}{r^2} \left\{ \left[-(1+3\nu) \mathbf{v}^2 + \frac{3}{2} \dot{r}^2 \nu \right] \mathbf{n} + (4\dot{r} - 2\dot{r}\nu) \mathbf{v} \right\} + \frac{G^2 M^2}{r^3} (4+2\nu) \mathbf{n} \right\} \\
 & + \frac{1}{c^5} \left\{ \frac{G^2 M^2}{r^3} \left[\left(-24\dot{r}^3 \nu + \frac{96}{5} \dot{r} \nu^2 \right) \mathbf{n} + \left(\frac{64}{5} \dot{r}^2 \nu - \frac{88}{15} \nu^2 \right) \mathbf{v} \right] + \frac{G^3 M^3}{r^4} \left(\frac{16}{5} \dot{r} \nu \mathbf{n} - \frac{8}{15} \nu \mathbf{v} \right) \right\} \\
 & + \frac{1}{c^7} \left\{ \frac{G^2 M^2}{r^3} \left\{ \left[-46\dot{r}^5 \nu + 24\dot{r}^5 \nu^2 + \mathbf{v}^4 \left(-\frac{138}{35} \dot{r} \nu - \frac{516}{35} \dot{r} \nu^2 \right) + \mathbf{v}^2 \left(56\dot{r}^3 \nu - \frac{4}{7} \dot{r}^3 \nu^2 \right) \right] \mathbf{n} \right. \right. \\
 & \left. \left. + \left[\frac{334}{7} \dot{r}^4 \nu - \frac{268}{7} \dot{r}^4 \nu^2 + \mathbf{v}^4 \left(\frac{1006}{105} \nu - \frac{64}{105} \nu^2 \right) + \mathbf{v}^2 \left(-\frac{2356}{35} \dot{r}^2 \nu + \frac{148}{5} \dot{r}^2 \nu^2 \right) \right] \mathbf{v} \right\} \right. \\
 & \left. + \frac{G^3 M^3}{r^4} \left\{ \left[\frac{10188}{35} \dot{r}^3 \nu + \frac{324}{7} \dot{r}^3 \nu^2 + \mathbf{v}^2 \left(-\frac{18656}{105} \dot{r} \nu - \frac{1116}{35} \dot{r} \nu^2 \right) \right] \mathbf{n} + \left[-\frac{17308}{105} \dot{r}^2 \nu - \frac{244}{21} \dot{r}^2 \nu^2 \right. \right. \right. \\
 & \left. \left. + \mathbf{v}^2 \left(\frac{4394}{105} \nu - \frac{16}{35} \nu^2 \right) \right] \mathbf{v} \right\} + \frac{G^4 M^4}{r^5} \left[\left(-\frac{152}{15} \dot{r} \nu - \frac{632}{105} \dot{r} \nu^2 \right) \mathbf{n} - \left(\frac{386}{105} \nu + \frac{16}{15} \nu^2 \right) \mathbf{v} \right] \right\}
 \end{aligned}$$