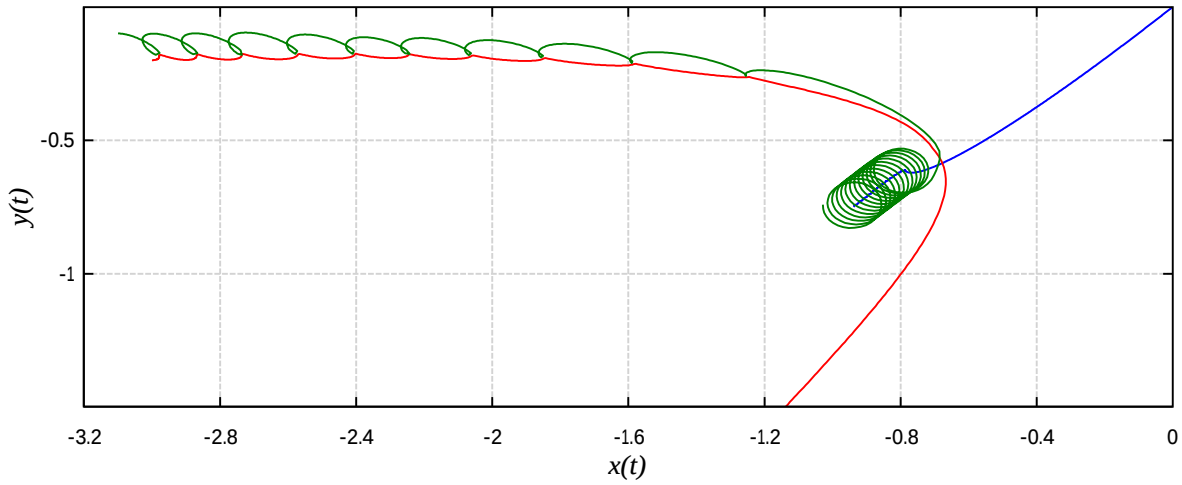
$$\begin{bmatrix} x1(t) & x2(t) & x3(t) \\ y1(t) & y2(t) & y3(t) \end{bmatrix} \quad \begin{matrix} x := R_{[1..3]} \\ y := R_{[4..6]} \end{matrix} \quad A(R, i, j) := \frac{G \cdot M_i \cdot (R_i - R_j)}{\text{norme}\left(\begin{bmatrix} x_i & y_i \end{bmatrix} - \begin{bmatrix} x_j & y_j \end{bmatrix}\right)^3}$$

R

$G := 1 \qquad m_1 := 30 \qquad m_2 := 2 \qquad m_3 := 0.5 \qquad t_{end} := 1 \qquad M := \text{eval}(\text{stack}(m_1, m_2, m_3))$

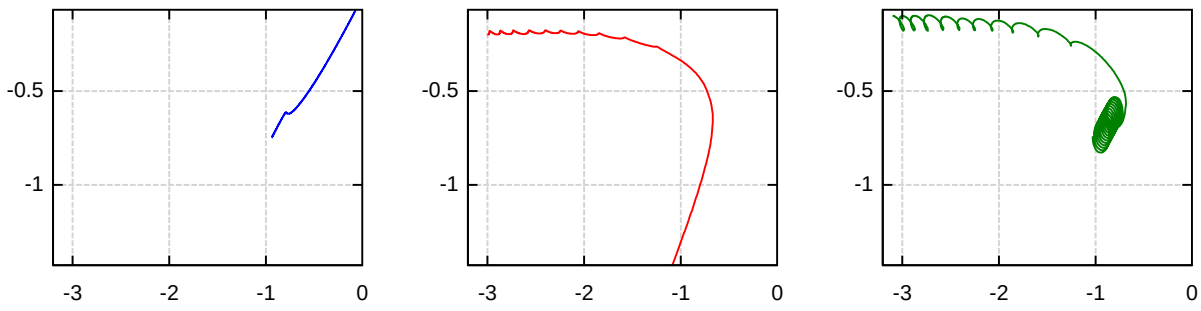
$$\begin{bmatrix} x1''(t) = A(x,2,1) + A(x,3,1) & x1(0) = 0 & x1'(0) = -1 \\ x2''(t) = A(x,1,2) + A(x,3,2) & x2(0) = -3 & x2'(0) = 1 \\ x3''(t) = A(x,1,3) + A(x,2,3) & x3(0) = -3.1 & x3'(0) = 2 \\ y1''(t) = A(y,2,1) + A(y,3,1) & y1(0) = 0 & y1'(0) = -1 \\ y2''(t) = A(y,1,2) + A(y,3,2) & y2(0) = -0.2 & y2'(0) = 0 \\ y3''(t) = A(y,1,3) + A(y,2,3) & y3(0) = -0.1 & y3'(0) = 0 \end{bmatrix}$$

$M := \text{Rkadapt}(R, t_{end}, 1100)$



$t := \text{col}(M, 1)$

$m_1 = 30$ $m_2 = 2$ $m_3 = 0.5$



$\begin{bmatrix} x1(t) \\ y1(t) \end{bmatrix}$ $\begin{bmatrix} x2(t) \\ y2(t) \end{bmatrix}$ $\begin{bmatrix} x3(t) \\ y3(t) \end{bmatrix}$