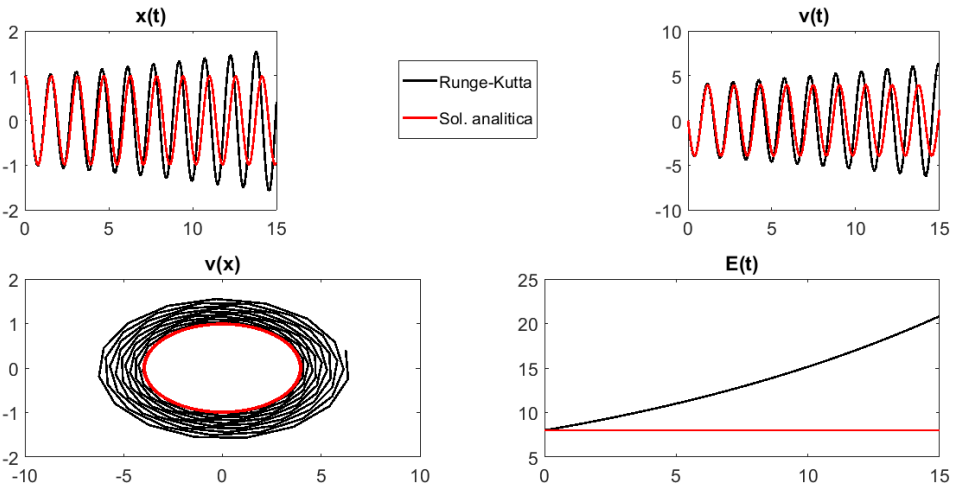
Física Computacional

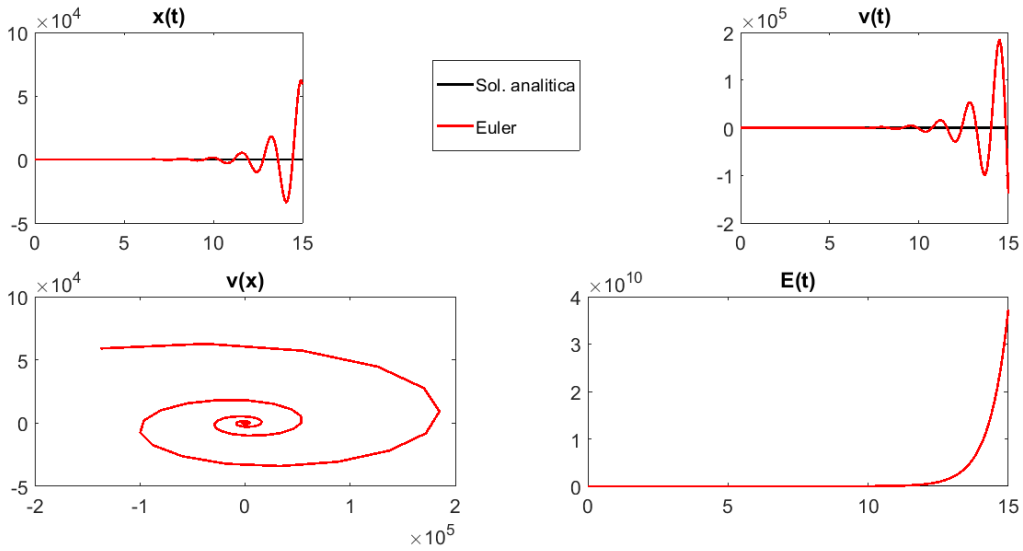
TRABALHO 3 – Soluções

Problema 3.1 – OSCILADOR HARMÓNICO –(RK2)

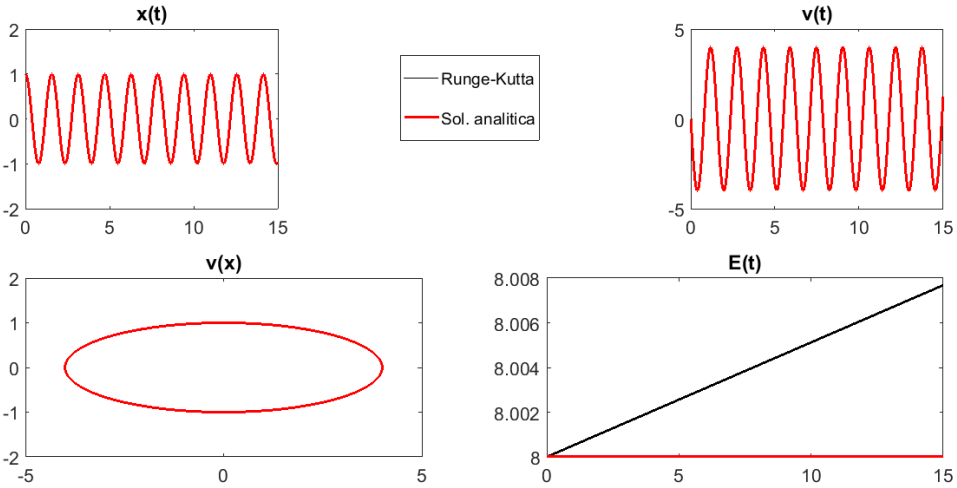
Método de Runge-Kutta 2, h=0.1



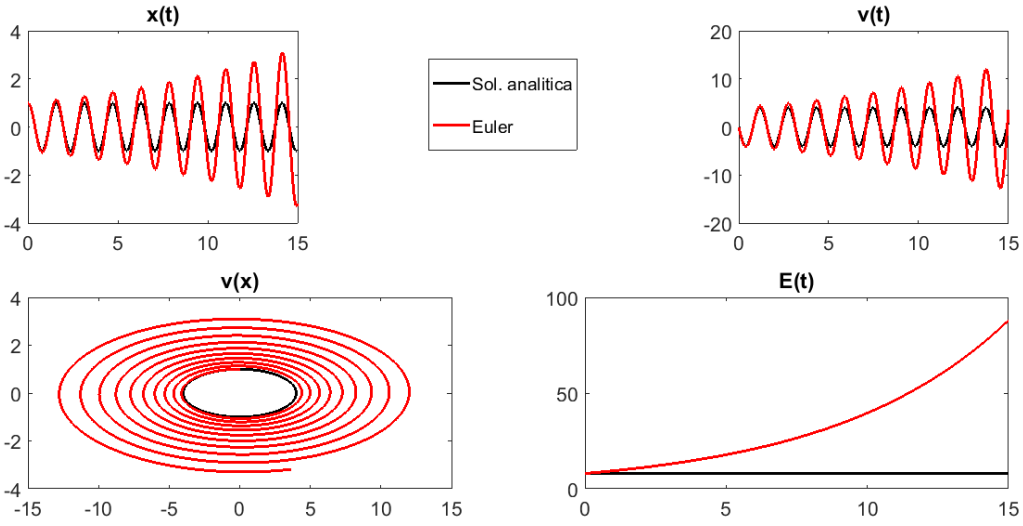
Método de Euler, h=0.1



Método de Runge-Kutta 2, h=0.01

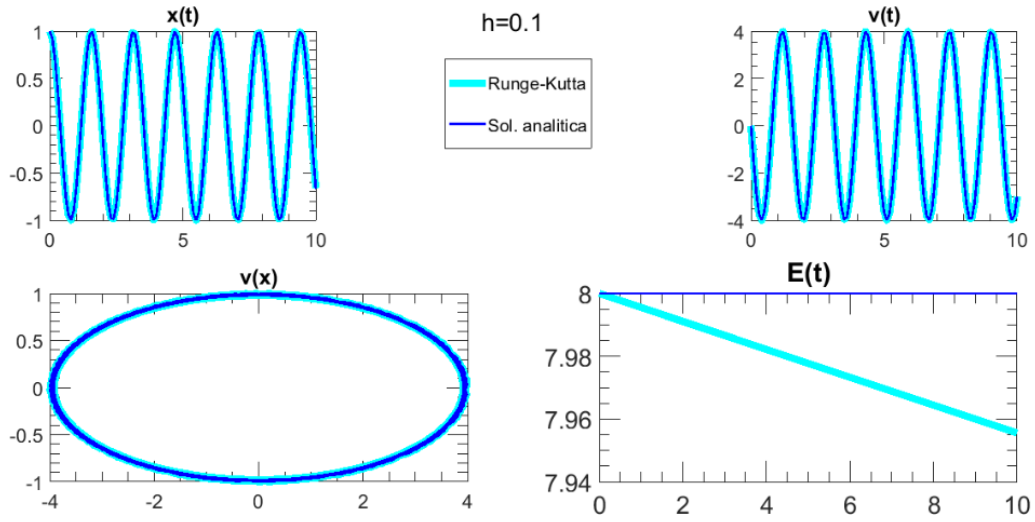


Método de Euler, h=0.01

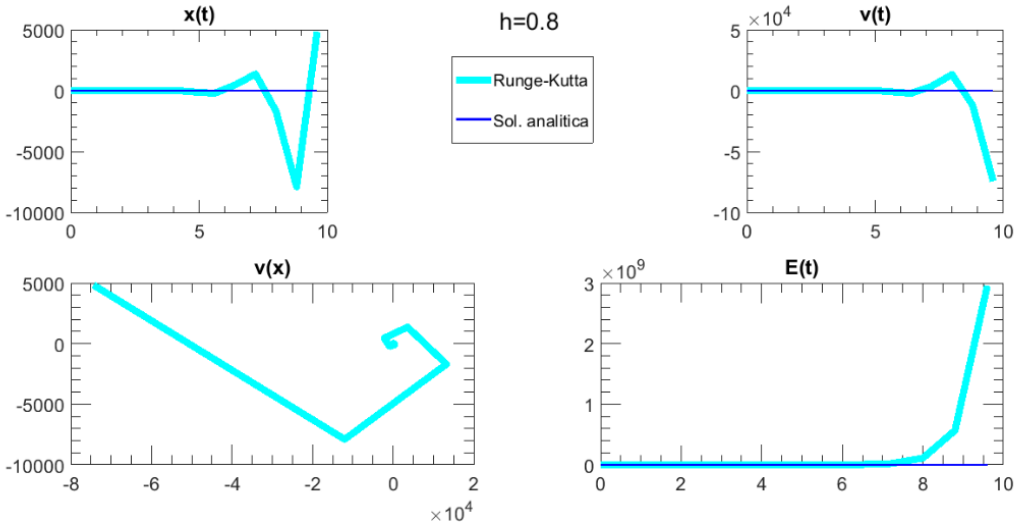


Problema 3.2 – OSCILADOR HARMÓNICO –(RK4)

a)

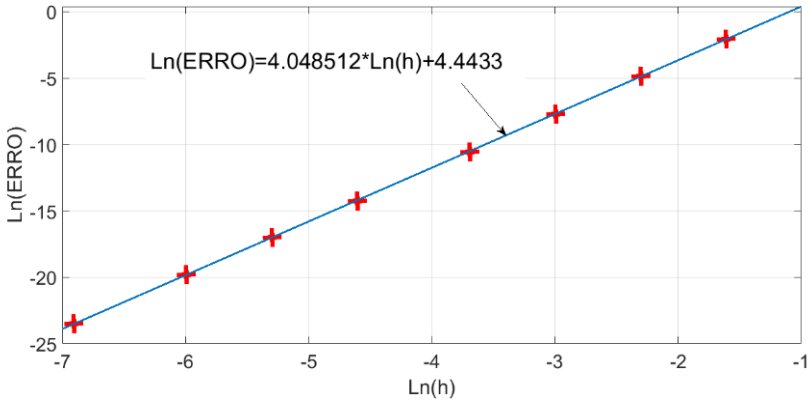


b)



Para h = 0.5 a solução decaí.

a) **ERRO = Cte * h^4 ⇒ Ln(ERRO) = 4*Ln(h) + Ln(Cte)**



Problema 3.3 – OSCILADOR HARMÓNICO (ode45) Runge-Kutta de passo adaptativo