Dvojité kyvadlo

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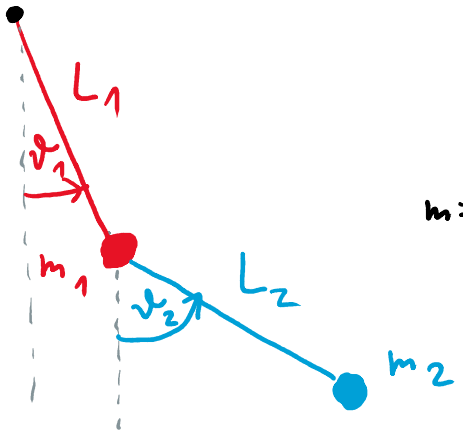

$m = m_1 + m_2$

$$T(\omega_1, x) = E - V(\vartheta_1, \vartheta_2)$$

$$\underbrace{\tfrac{1}{2} m L_1^2 \omega_1^2}_{C} + \underbrace{\tfrac{1}{2} m_2 L_2^2}_{A} x^2 + \underbrace{m_2 L_1 L_2 \omega_1}_{B} x \cos\Delta\vartheta = E - V$$

$$C + Ax^2 + Bx = E - V$$

$$Ax^2 + Bx + C + V - E = 0$$

↓ kvadratická rovnice

$$x_{1,2} = \frac{-B \pm \sqrt{B^2 - 4A(C+V-E)}}{2A}$$

↳ dva kořeny ω_1 splňující $T + V = E$