4 Kinematika krutog tijela

Rotacija oko nepomične osi

4.3.1 $v = 247{,}4$ m/s, $a_n = 122{,}4\cdot 10^3$ m/s^2, $a_t = 19{,}6$ m/s^2

4.3.2 $\alpha = -0{,}921$ rad/s^2, $\omega_o = 4{,}21$ rad/s

4.3.3 $N = 1{,}194$ okreta, $v_B = 8$ m/s, $s_B = 15$ m, $a_C = 4{,}24$ m/s^2

4.3.4 $N = 38{,}43$ okreta

4.3.5 $\omega = 2{,}74$ rad/s, $\alpha = 30$ rad/s^2

4.3.6 $v = 16{,}8$ m/s, $a_A^n = 705{,}6$ m/s^2, $a_A^t = 8{,}4$ m/s

4.3.7 $v = 6{,}4$ cm/s, $a_t = 3{,}2$ cm/s^2, $a_n = 5{,}12$ cm/s^2

4.3.8 $\vec{v}_I = 12\vec{i} - 36\vec{j}$, $v_I = 37{,}95$ cm/s, $\vec{a} = 216\vec{i} + 72\vec{j} - 480\vec{k}$, $a_I = 531{,}3$ cm/s2

4.3.9 $\vec{v} = 99{,}8\vec{i} + 46\vec{j} + 38{,}4\vec{k}$, cm/s, $\vec{a} = -600\vec{i} + 767\vec{j} + 639\vec{k}$, cm/s^2 $v_E = 116{,}5$ m/s, $a_E = 1164,7$ m/s^2

4.3.10 $\omega = 100$ rad/s, $\alpha = -6{,}667$ rad/s^2

4.3.11 $t = 1{,}565$ s, $v = 0{,}625$ m/s

4.3.12 $\vec{\omega} = -\sqrt{8}\,\vec{k}$, $\omega = -\sqrt{8}$ rad/s, $\vec{\alpha} = 6\,\vec{k}$, $\alpha = 6$ rad/s^2

4.3.13 $\vec{\omega} = -24{,}9\,\vec{k}$, $\omega = -24{,}9$ rad/s

4.3.14 $N = 279$ okretaja

4.3.15 $N = 513$ okretaja

Ravninsko gibanje krutog tijela

4.4.1 $v_D = 8$ cm/s, udesno

4.4.2 $v_C = rab^{-1}\cdot\omega_o$

4.4.3 $\omega_{AD} = 20$ rad/s, $v_B = 2r\omega\sin\beta = 6$ m/s $v_D = r\omega\sqrt{3} = 10{,}39$ m/s

4.4.4 $a_A = \dfrac{v^2\sqrt{2}}{2R}$, $a_C = \dfrac{l\cdot v^2\sqrt{2}}{2\cdot R^2}$

4.4.5 $\omega_{AB} = 7{,}5$ rad/s, $\alpha_{AB} = -10{,}55$ rad/s^2, $\omega_{BC} = 5{,}62$ rad/s, $\alpha_{BC} = 10{,}8$ rad/s^2

4.4.6 $\omega_{OA} = 1$ rad/s, $\alpha_{OA} = 1{,}73$ rad/s^2

4.4.7 $\omega = 0{,}4$ rad/s, $v_0 = 4$ cm/s, $v_C = 14$ cm/s

4.4.8 $\omega_{AB} = 83{,}7$ rad/s, $\vec{v}_C = -7{,}213\vec{i} + 10{,}73\vec{j}$, $v_C = 13$ mm/s

4.4.9 $v_M = 1{,}744$ m/s, $a_M = 9{,}7$ m/s^2

4.4.10 $v_C = 3{,}42$ m/s, $\omega_{ABC} = 4$ rad/s, $a_C = 17{,}5$ m/s^2, $\alpha_{ABC} = 37{,}5$ rad/s^2

4.4.11 $v_B = 3$ m/s, $a_B = 8{,}2$ m/s^2

4.4.12 Položaj $P_{ABC} \perp \vec{v}_B$ i u pravcu $\overline{OA}$ $v_A = 2$ m/s, $a_A = 20$ m/s^2, $v_B = 2{,}4$ m/s, $v_C = 1{,}15$ m/s, $a_B = 10$ m/s^2, $a_C = 24{,}4$ m/s^2

4.4.13 $v_C = 3{,}2$ m/s, $a_C = 11{,}2$ m/s^2

4.4.14 $v_C = 1{,}54$ m/s, $a_C = 26{,}8$ m/s^2