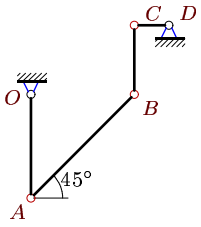
Уравнение трех угловых ускорений. Две степени свободы

В указанном положении механизма заданы угловые скорости ($с^{-1}$) и ускорения ($с^{-2}$) двух звеньев. Длины звеньев даны в сантиметрах. Звенья, направление которых не указано, принимать вертикальными или горизонтальными. Найти угловые ускорения звеньев механизма.

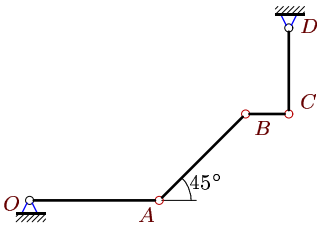
Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.: ФИЗМАТЛИТ, 2008. — 384 с. (с.183.)

Задача К-20.1. *Абалин Максим*



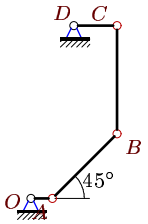
$\omega_{BCz} = -6$, $\omega_{CDz} = 6$,
$\varepsilon_{OAz} = -12$, $\varepsilon_{CDz} = 6$,
$OA = 3$, $AB = 3\sqrt{2}$, $BC = 2$, $CD = 1$.

Задача К-20.2. *Абдулвалиев Роман*



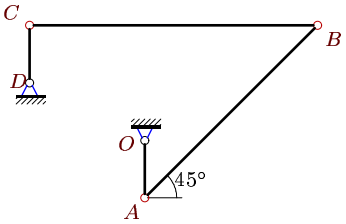
$\omega_{OAz} = 2$, $\omega_{CDz} = 4$,
$\varepsilon_{OAz} = 4$, $\varepsilon_{BCz} = 104$,
$OA = 3$, $AB = 2\sqrt{2}$, $BC = 1$, $CD = 2$.

Задача К-20.3. *Антонова Вера*



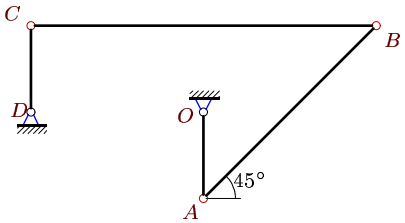
$\omega_{OAz} = -15$, $\omega_{CDz} = 0$,
$\varepsilon_{OAz} = -30$, $\varepsilon_{BCz} = -84$,
$OA = 1$, $AB = 3\sqrt{2}$, $BC = 5$, $CD = 2$.

Задача К-20.4. *Большаков Павел*



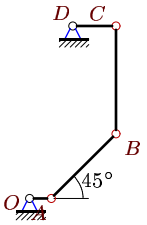
$\omega_{OAz} = \omega_{CDz} = -15$,
$\varepsilon_{OAz} = 15$, $\varepsilon_{BCz} = 12$,
$OA = CD = 1$, $AB = 3\sqrt{2}$, $BC = 5$.

Задача К-20.5. *Воропай Руслан*



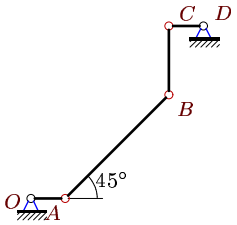
$\omega_{BCz} = -2$, $\omega_{CDz} = 0$,
$\varepsilon_{OAz} = -16$, $\varepsilon_{CDz} = -8$,
$OA = CD = 1$, $AB = 2\sqrt{2}$, $BC = 4$.

Задача К-20.6. *Ершов Леонид*



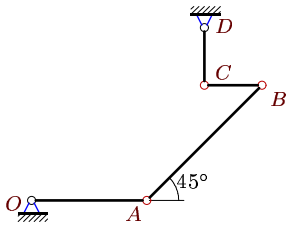
$\omega_{BCz} = -3$, $\omega_{CDz} = 0$,
$\varepsilon_{OAz} = -30$, $\varepsilon_{CDz} = 15$,
$OA = 1$, $AB = 3\sqrt{2}$, $BC = 5$, $CD = 2$.

Задача К-20.7. *Загородний Константин*



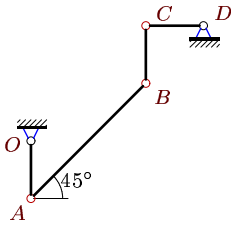
$\omega_{OAz} = -6$, $\omega_{CDz} = 6$,
$\varepsilon_{OAz} = 0$, $\varepsilon_{BCz} = -33$,
$OA = CD = 1$, $AB = 3\sqrt{2}$, $BC = 2$.

Задача К-20.8. *Казбаев Владимир*



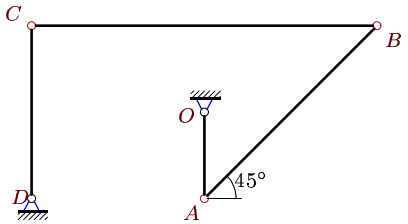
$\omega_{BCz} = -4$, $\omega_{CDz} = 0$,
$\varepsilon_{BCz} = 6$, $\varepsilon_{CDz} = -2$,
$OA = 2$, $AB = 2\sqrt{2}$, $BC = CD = 1$.

Задача К-20.9. *Кириенок Дмитрий*



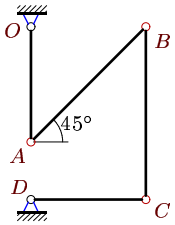
$\omega_{OAz} = \omega_{CDz} = -2$,
$\varepsilon_{OAz} = 0$, $\varepsilon_{BCz} = -22$,
$OA = 1$, $AB = 2\sqrt{2}$, $BC = CD = 1$.

Задача К-20.10. *Китайкина Ирина*



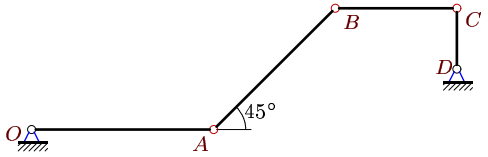
$\omega_{OAz} = -8$, $\omega_{CDz} = -16$,
$\varepsilon_{BCz} = -154$, $\varepsilon_{CDz} = 0$,
$OA = 1$, $AB = 2\sqrt{2}$, $BC = 4$, $CD = 2$.

Задача К-20.11. *Косарева Елена*



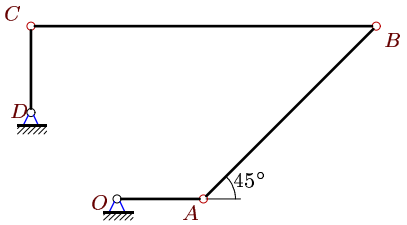
$\omega_{OAz} = 6$, $\omega_{BCz} = -4$,
$\varepsilon_{OAz} = 6$, $\varepsilon_{BCz} = -36$,
$OA = CD = 2$, $AB = 2\sqrt{2}$, $BC = 3$.

Задача К-20.12. *Костин Андрей*



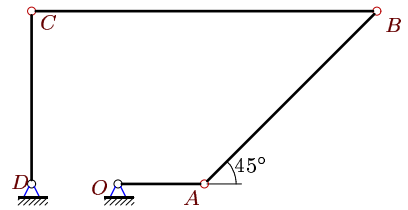
$\omega_{OAz} = 4$, $\omega_{BCz} = -4$,
$\varepsilon_{OAz} = 8$, $\varepsilon_{BCz} = 26$,
$OA = 3$, $AB = 2\sqrt{2}$, $BC = 2$, $CD = 1$.

Задача К-20.13. *Любчик Владислав*



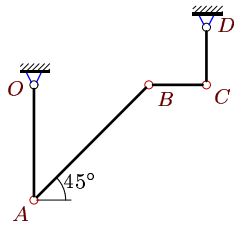
$\omega_{OAz} = -8$, $\omega_{BCz} = -2$,
$\varepsilon_{BCz} = -14$, $\varepsilon_{CDz} = -16$,
$OA = CD = 1$, $AB = 2\sqrt{2}$, $BC = 4$.

Задача К-20.14. *Маслов Владислав*



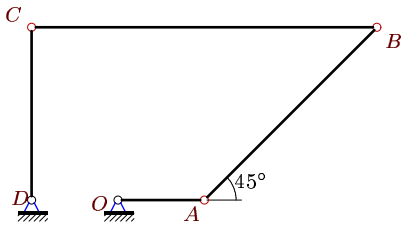
$\omega_{OAz} = -8$, $\omega_{BCz} = 6$,
$\varepsilon_{OAz} = 8$, $\varepsilon_{BCz} = -114$,
$OA = 1$, $AB = 2\sqrt{2}$, $BC = 4$, $CD = 2$.

Задача К-20.15. *Матвеев Александр*



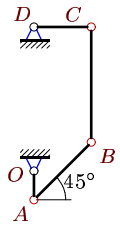
$\omega_{OAz} = 2$, $\omega_{BCz} = -4$,
$\varepsilon_{OAz} = 2$, $\varepsilon_{BCz} = 24$,
$OA = 2$, $AB = 2\sqrt{2}$, $BC = CD = 1$.

Задача К-20.16. *Пиценко Денис*



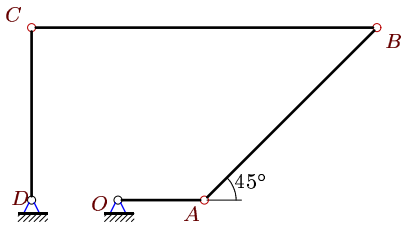
$\omega_{OAz} = -8$, $\omega_{BCz} = 6$,
$\varepsilon_{OAz} = 8$, $\varepsilon_{CDz} = -16$,
$OA = 1$, $AB = 2\sqrt{2}$, $BC = 4$, $CD = 2$.

Задача К-20.17. *Плешанова Анна*



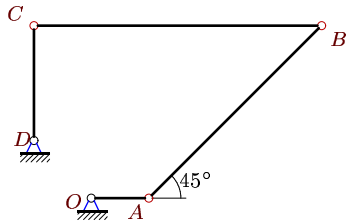
$\omega_{OAz} = -8$, $\omega_{CDz} = 0$,
$\varepsilon_{BCz} = 22$, $\varepsilon_{CDz} = -16$,
$OA = 1$, $AB = 2\sqrt{2}$, $BC = 4$, $CD = 2$.

Задача К-20.18. *Родионова Варвара*



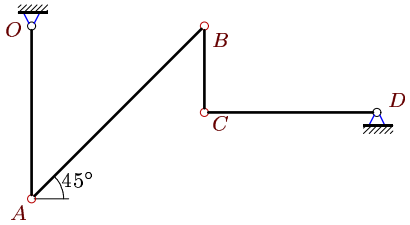
$\omega_{OAz} = -8$, $\omega_{CDz} = -16$,
$\varepsilon_{OAz} = -16$, $\varepsilon_{BCz} = -48$,
$OA = 1$, $AB = 2\sqrt{2}$, $BC = 4$, $CD = 2$.

Задача К-20.19. *Сулименко Данил*



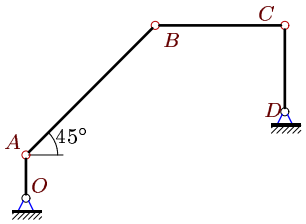
$\omega_{OAz} = -15$, $\omega_{CDz} = 0$,
$\varepsilon_{OAz} = -45$, $\varepsilon_{BCz} = -51$,
$OA = 1$, $AB = 3\sqrt{2}$, $BC = 5$, $CD = 2$.

Задача К-20.20. *Сысолетин Иван*



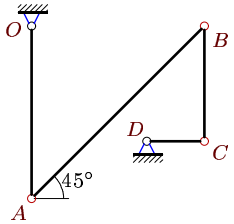
$\omega_{OAz} = 2$, $\omega_{BCz} = -4$,
$\varepsilon_{OAz} = 2$, $\varepsilon_{BCz} = -32$,
$OA = CD = 2$, $AB = 2\sqrt{2}$, $BC = 1$.

Задача К-20.21. *Фомичев Кирилл*



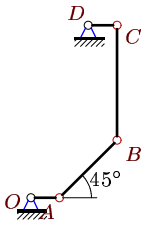
$\omega_{OAz} = 9$, $\omega_{BCz} = 3$,
$\varepsilon_{BCz} = 45$, $\varepsilon_{CDz} = 9$,
$OA = 1$, $AB = 3\sqrt{2}$, $BC = 3$, $CD = 2$.

Задача К-20.22. *Шпагина Юлия*



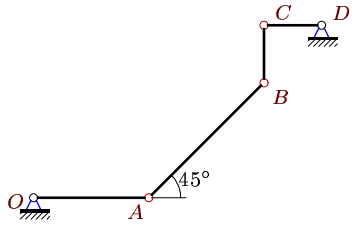
$\omega_{OAz} = 6$, $\omega_{CDz} = 0$,
$\varepsilon_{OAz} = \varepsilon_{CDz} = 12$,
$OA = 3$, $AB = 3\sqrt{2}$, $BC = 2$, $CD = 1$.

Задача К-20.23. *Щеглов Иван*



$\omega_{OAz} = -8$, $\omega_{CDz} = 8$,
$\varepsilon_{OAz} = \varepsilon_{CDz} = -16$,
$OA = CD = 1$, $AB = 2\sqrt{2}$, $BC = 4$.

Задача К-20.24. *Карпов Юрий*



$\omega_{OAz} = -2$, $\omega_{BCz} = -6$,
$\varepsilon_{OAz} = -2$, $\varepsilon_{CDz} = 2$,
$OA = 2$, $AB = 2\sqrt{2}$, $BC = CD = 1$.