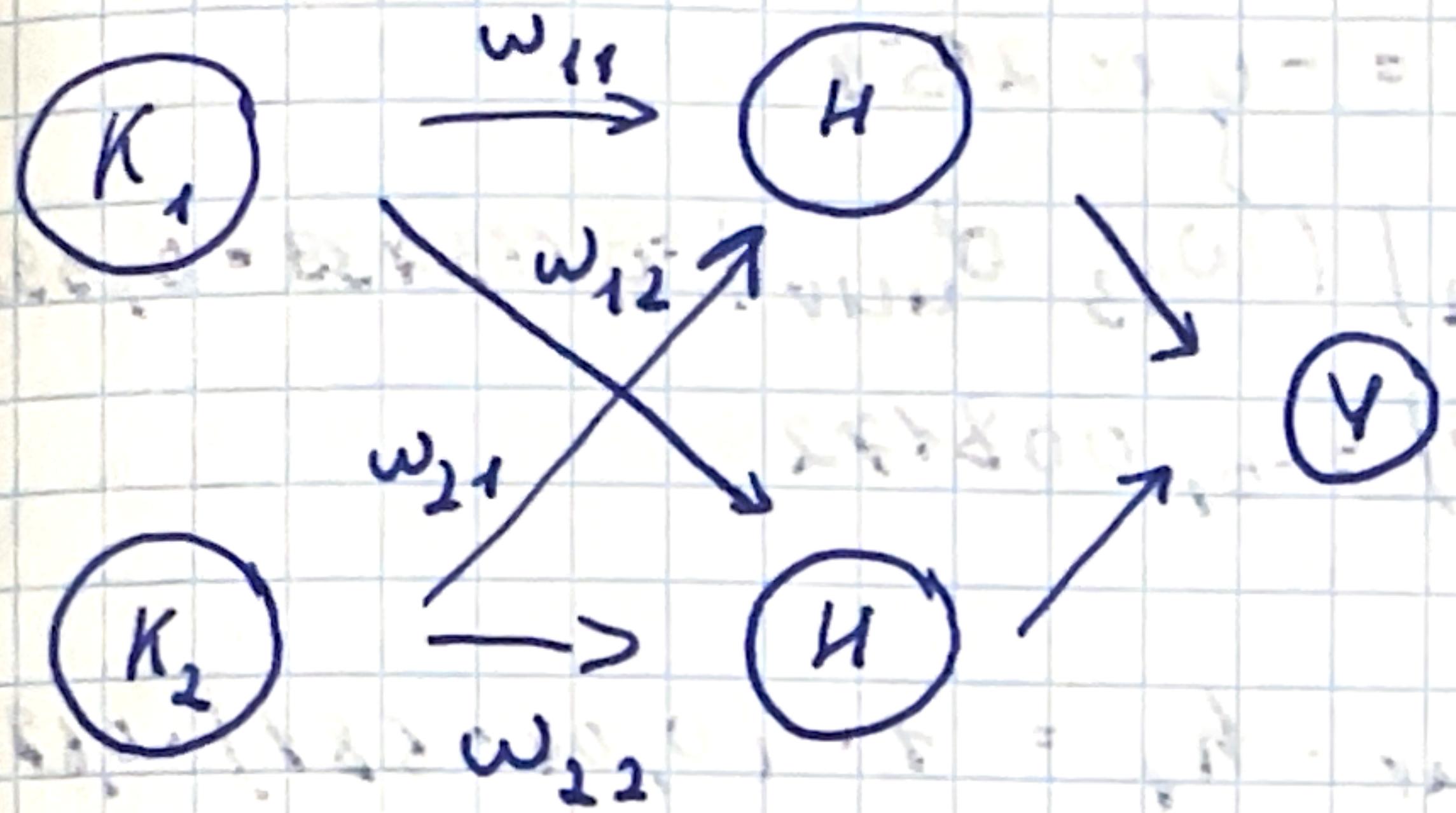


Информационно-управляющая



$$k_1 = 0,35$$

$$k_2 = 0,9$$

$$\sigma = \frac{1}{1 + e^{-z}}$$

$$w_{11} = 0,1$$

$$w_{21} = 0,8$$

$$w_{12} = 0,34$$

$$w_{22} = 0,6$$

$$l=1$$

$$y_{\text{target}} = 0,5$$

1. управление

$$\alpha_B_1 = k_1 w_{11} + k_2 w_{21} = 0,35 \cdot 0,1 + 0,9 \cdot 0,8 = 0,755$$

$$h_1 = \sigma(\alpha_1) = 0,680267$$

$$\alpha_2 = k_1 w_{12} + k_2 w_{22} = 0,35 \cdot 0,34 + 0,9 \cdot 0,6 = 0,68$$

$$h_2 = \sigma(\alpha_2) = 0,663739$$

$$\alpha_y = h_1 w_{13} + h_2 w_{23} = 0,680267 \cdot 0,3 +$$

$$0,663739 \cdot 0,9 = 0,861445$$

$$y = \sigma(\alpha_y) = 0,690283$$

$$\sigma_{\text{our}} = (1 - y)y(1 - y) = (0,5 - 0,69) \cdot 0,69 \cdot (1 - 0,690283) = 0,040681$$

$$\delta_1 = h_1 (1 - h_1) / (\omega_{13} \sigma_{\text{our}}) = 0,692651 \cdot 0,336211$$

$$d_1 = 0,35 \cdot 0,099071 + 0,9 \cdot 0,292611 = 0,452525$$

$$(0,3 - 0,040681) = -0,002654$$

$$h_1 = 0,629229$$

$$\delta_2 = h_2 (1 - h_2) / (\omega_{23} \sigma_{\text{our}}) = 0,063439 \cdot 0,336211$$

$$h_2 = 0,462036$$

$$\Delta w_{13} = f_k \sigma_{\text{our}} \cdot h_1 = 1 \cdot (0,040681) \cdot 0,680264$$

$$\delta_1 = \frac{1}{2} (t-y)^2 - \frac{1}{2} (0,5 - 0,682019)^2 = 0,016566$$

$$\omega_{13}^{\text{new}} = 0,3 / (- (0,02262324)) = 0,29232328$$

$$\Delta w_{23} = \eta \beta_{\text{our}} d_2 = 1 / (-0,040681) \cdot 0,683439 = -0,317884$$

$$\delta_2 = h_2 / (1 - h_2) / (\omega_{23} \sigma_{\text{our}}) = 0,149229 \cdot 0,682024$$

$$(0,2 \times 2326 : (-0,039424) / 0,002340) \cdot 0,662036 \cdot 0,337964 \cdot (0,872998 - 0,032424)$$

$$\omega_{23}^{\text{new}} = 0,9 + (-0,02262324) = 0,8422998$$

$$\Delta w_4 = 1 - (0,002654) \cdot 0,35 = -0,0000929$$

$$= 0,0027710$$

$$\delta_1 = h_1 / (1 - h_1) / (\omega_{13} \sigma_{\text{our}}) = 0,626839 \cdot 0,245494$$

$$\Delta w_{23} = 1 / (0,002654) \cdot 0,35 = 0,0028860$$

$$\Delta w_{23} = 1 \cdot (-0,08172) \cdot 0,9 = -0,002554$$

$$\Delta w_{12} = 1 / (0,002654) = 0,382019$$

$$\Delta w_{23} = -0,0000819$$

$$\Delta w_{23} = -0,026133$$

$$\Delta w_{23}^{\text{new}} = 0,098252$$

$$\Delta w_{21} = 0,0082106$$

$$\Delta w_{21}^{\text{new}} = 0,495505$$

$$\Delta w_{12} = 0,002699$$

$$\Delta w_{12}^{\text{new}} = 0,394441$$

$$\Delta w_{22} = 0,006939$$

$$\Delta w_{22}^{\text{new}} = 0,585206$$

3. umrechnen

$$\alpha_1 = 0,35 \cdot 0,9 + 0,9 \cdot 0,2552 = 0,4520801$$

$$d_{11} = \frac{1}{1+e^{-0,4520801}} = 0,649634$$

$$\alpha_2 = 0,6 \times 0,8909 = 0,53408909$$

$$d_{22} = 0,661203$$

$$\alpha_3 = \mu \cdot 0,2415494 + \mu_2 \cdot 0,841865 = 0,2557220$$

$$d_{33} = \mu \cdot 0,680435$$

$$y = 0,680435$$

$$E = \frac{1}{2} (t-y)^2 = \frac{1}{2} (0,5 - 0,680435)^2 =$$

$$= 0,0161229$$

$$\delta_{\text{our}} = |t-y| / y = 0,5 - 0,680435 /$$

$$= 0,180435 \cdot 0,319565 = -0,0392234$$

$$\alpha_4 = 0,35 \cdot 0,092454 + 0,90,248452 \cdot 0,2482152.$$

$$d_{44} = 0,678289395$$

$$\alpha_2 = 0,65808195$$

$$d_{22} = 0,65808195$$

$$\alpha_3 = 0,689344524$$

$$y = 0,1658222283$$

$$E = \frac{1}{2} (t-y)^2 = \frac{1}{2} (0,5 - 0,65808195)^2 = 0,013249427$$

$$\delta_{\text{our}} = -0,036896872$$

$$\alpha_1 = 0,35 \cdot 0,092454 + 0,90,248452 \cdot 0,2482152.$$

$$d_{11} = 0,661203 \cdot 0,3382284 (0,841865 \cdot 1/0,039223)$$

$$= 0,002622$$

$$\Delta w_{13} = 0,026665$$

$$w_{13}^{\text{new}} = 0,218829$$

$$\alpha_2 = 0,6 \times 0,960435$$

$$d_{22} = -0,001960435$$

$$\Delta w_{23} = -0,024308244$$

$$w_{23}^{\text{new}} = 0,153383280$$

$w_{11} = 0,0012810,0,25 = 0,000298$

$$\Delta w_{11} = -0,0002053$$

$$w_{11}^{\text{new}} = 0,2933452$$

$$\Delta w_{22} = 0,006860$$

$$w_{22}^{\text{new}} = 0,548846$$

$$\Delta w_{11} = -0,0006161510 \quad w_{11}^{\text{new}} = 0,096832849$$

$$\Delta w_{21} = -0,001584308 \quad w_{21}^{\text{new}} = 0,791867012$$

$$\Delta w_{12} = -0,002382838 \quad w_{12}^{\text{new}} = 0,369390162$$

$$\Delta w_{22} = -0,006127298 \quad w_{22}^{\text{new}} = 0,5722718702$$

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