# IZVODI PRAVILA UČENJA
## PARAMETARA SUSTAVA ANFIS

PARAMETRI: $a_i$; $b_i$; $c_i$; $d_i$  u premisi pravila i

$\quad\quad\quad\quad$ $p_i$; $q_i$; $r_i$  u konzekvensu pravila i

$$\mu_{A_i}(x) = \frac{1}{1+e^{b_i(x-a_i)}} \quad\quad \mu_{B_i}(x) = \frac{1}{1+e^{d_i(x-c_i)}} \quad\quad \alpha_i = \mu_{A_i} \cdot \mu_{B_i}$$

$$z_i(x,y) = p_i x + q_i y + r_i$$

$y_k$ – stvarni izlaz sustava $\quad\quad\quad$ $o_k$ – izlaz ANFIS-a

$$\sigma = \frac{\sum_{i=1}^{m} \alpha_i z_i}{\sum_{i=1}^{m} \alpha_i} \quad\quad\quad E_k = \frac{1}{2}(y_k - o_k)^2$$

Ažuriranje pojedinih parametara:

$\quad$ STOHASTIČKA VARIJANTA: $\quad \psi(t+1) = \psi(t) - \eta \cdot \dfrac{\partial E_k}{\partial \psi}$

$\quad$ GRUPNA VARIJANTA: $\quad \psi(t+1) = \psi(t) - \eta \cdot \sum_{i=1}^{N} \dfrac{\partial E_k}{\partial \psi}$