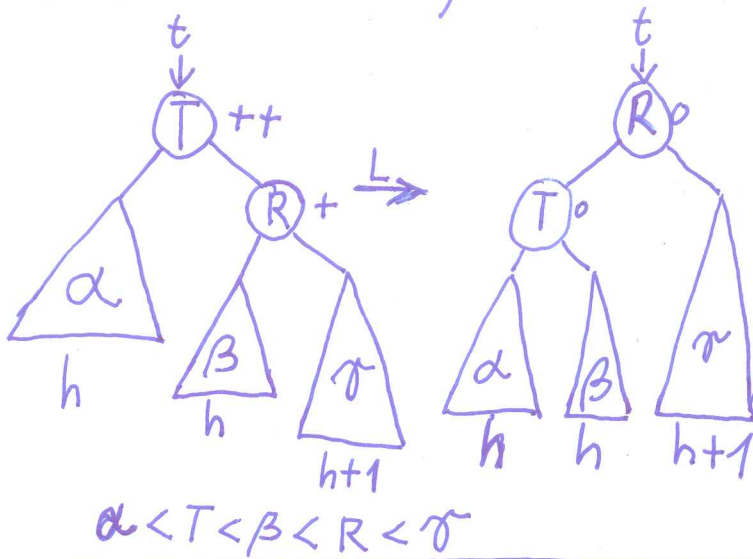


# AVL tree balancing

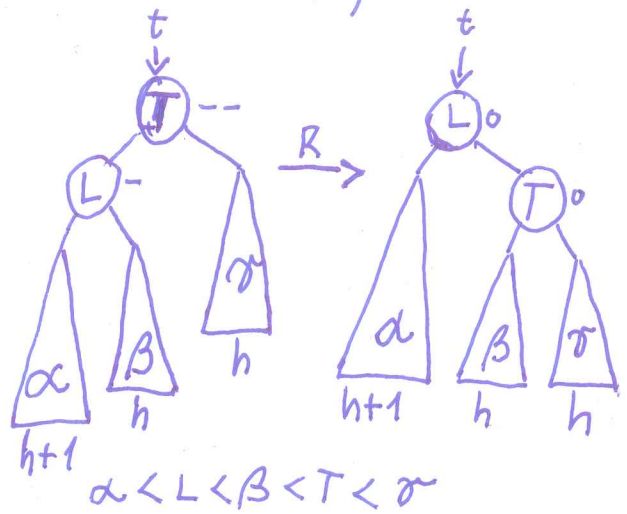
After INS. only  $\begin{Bmatrix} (+, +, +) \\ (+, +, -) \\ (-, -, -) \\ (-, -, +) \end{Bmatrix}$  balancing is possible

(INS. + balance) restores  $h(t)$

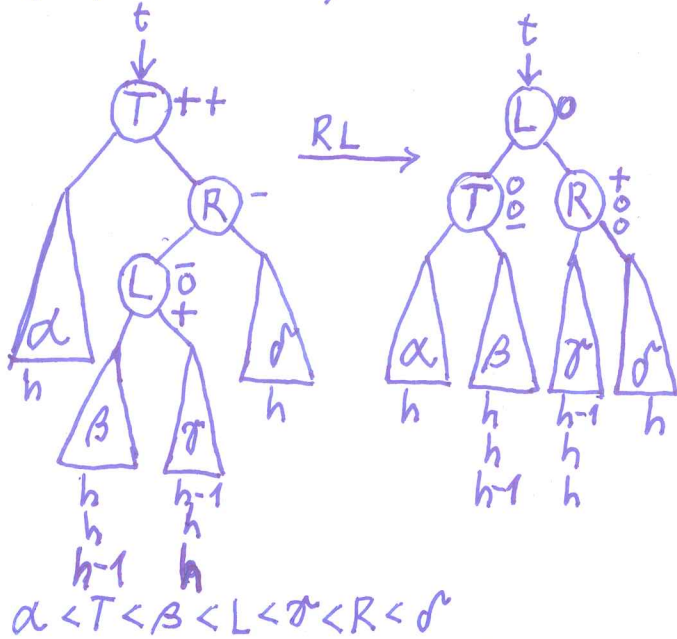
$(+, +, +)$  balancing



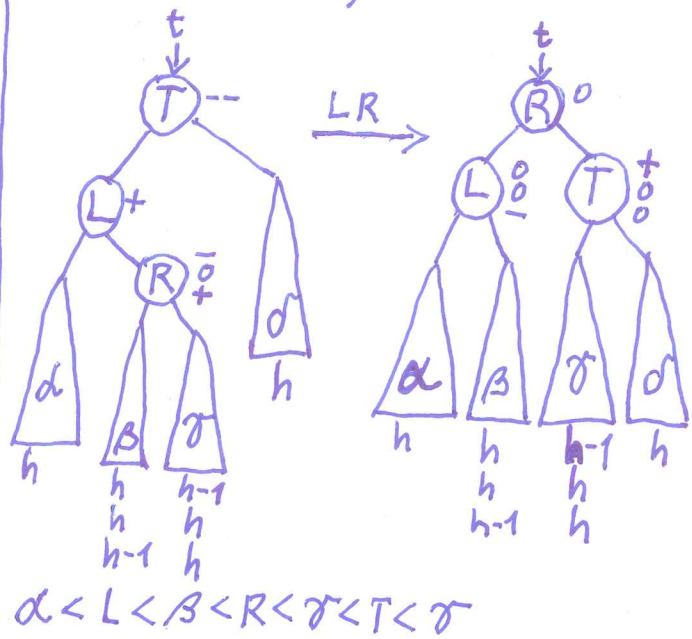
$(-, -, -)$  balancing



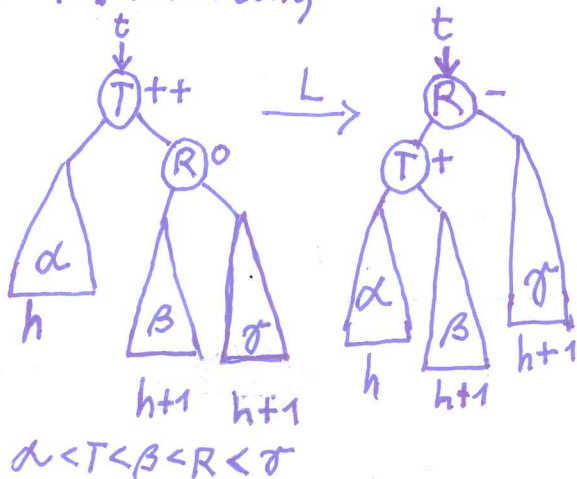
$(+, +, -)$  balancing



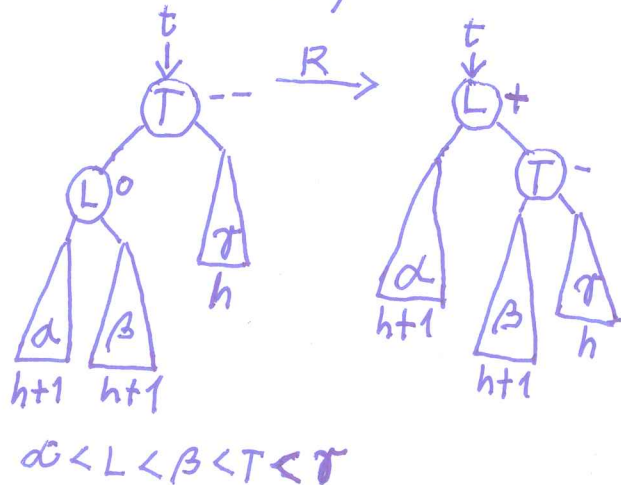
$(-, -, +)$  balancing



$(+, +, 0)$  balancing



$(-, -, 0)$  balancing



DEL. + balance  $\begin{Bmatrix} (+, +, +) \\ (+, +, -) \\ (-, -, -) \\ (-, -, +) \end{Bmatrix}$  decreases  $h(t)$

DEL. + balance  $\begin{Bmatrix} (+, +, 0) \\ (-, -, 0) \end{Bmatrix}$  keeps  $h(t)$