

Zusammenhang zwischen Leaktoren u. Verdrängungen
beim Stab im dreidimensionalen

Transformationsmatrix $[T] =$

$$\begin{bmatrix} \frac{\partial^4}{\partial x^4} & \frac{\partial^4}{\partial x^3} & \frac{\partial^4}{\partial x^2} & \frac{\partial^4}{\partial x} & \frac{\partial^4}{\partial x^0} \\ \frac{\partial^3}{\partial x^3} & \frac{\partial^3}{\partial x^2} & \frac{\partial^3}{\partial x} & \frac{\partial^3}{\partial x^0} & \frac{\partial^3}{\partial x^0} \\ \frac{\partial^2}{\partial x^2} & \frac{\partial^2}{\partial x} & \frac{\partial^2}{\partial x^0} & \frac{\partial^2}{\partial x^0} & \frac{\partial^2}{\partial x^0} \\ \frac{\partial}{\partial x} & \frac{\partial}{\partial x} & \frac{\partial}{\partial x} & \frac{\partial}{\partial x} & \frac{\partial}{\partial x} \\ \frac{\partial^0}{\partial x^0} & \frac{\partial^0}{\partial x^0} & \frac{\partial^0}{\partial x^0} & \frac{\partial^0}{\partial x^0} & \frac{\partial^0}{\partial x^0} \end{bmatrix}$$

Transformation der Verschiebungen (3d-0 Stab)

$$\begin{bmatrix} u_I \\ u_{II} \end{bmatrix} = \begin{bmatrix} \frac{\partial^4}{\partial x^4} & \frac{\partial^4}{\partial x^3} & \frac{\partial^4}{\partial x^2} & \frac{\partial^4}{\partial x} & \frac{\partial^4}{\partial x^0} \\ \frac{\partial^3}{\partial x^3} & \frac{\partial^3}{\partial x^2} & \frac{\partial^3}{\partial x} & \frac{\partial^3}{\partial x^0} & \frac{\partial^3}{\partial x^0} \\ \frac{\partial^2}{\partial x^2} & \frac{\partial^2}{\partial x} & \frac{\partial^2}{\partial x^0} & \frac{\partial^2}{\partial x^0} & \frac{\partial^2}{\partial x^0} \\ \frac{\partial}{\partial x} & \frac{\partial}{\partial x} & \frac{\partial}{\partial x} & \frac{\partial}{\partial x} & \frac{\partial}{\partial x} \\ \frac{\partial^0}{\partial x^0} & \frac{\partial^0}{\partial x^0} & \frac{\partial^0}{\partial x^0} & \frac{\partial^0}{\partial x^0} & \frac{\partial^0}{\partial x^0} \end{bmatrix} \begin{bmatrix} u_1 \\ u_2 \\ u_3 \\ u_4 \\ u_5 \\ u_6 \end{bmatrix}$$

$[T]$