plane-stress Bedingung für kleine Deformationen

```
Clear["Global`*"]';
(* trikline Symmetrie *)
CC = {{c11, c12, c13, c14, c15, c16}, {c12, c22, c23, c24, c25, c26},
    {c13, c23, c33, c34, c35, c36}, {c14, c24, c34, c44, c45, c46},
    {c15, c25, c35, c45, c55, c56}, {c16, c26, c36, c46, c56, c66}};
(* Isotropie *)
CCI = CC //. {c11 → 2 μ + λ, c22 → c11, c33 → c11, c12 → λ, c13 → c12, c23 → c12, c44 → c11 - c12,
    c55 → c44, c66 → c44, c14 → 0, c15 → c14, c16 → c14, c24 → c14, c25 → c14, c26 → c14,
    c34 → c14, c35 → c14, c36 → c14, c44 → c14, c45 → c14, c46 → c14, c56 → c14};

e = {e11, e22, e33, e12, e13, e23};
s = {s11, s22, 0, s12, 0, 0};
sr = CC.e;
eq = {s[[3]] == sr[[3]], s[[5]] == sr[[5]], s[[6]] == sr[[6]]};
sol = Solve[eq, {e13, e23, e33}];
e13 = e13 /. sol[[1, 1]];
e23 = e23 /. sol[[1, 2]];
e33 = e33 /. sol[[1, 3]];

sr[[1]] // Simplify // FortranForm;

Clear[e11, e22, e33, e12, e13, e23, s11, s22, s12];
(* Isotropie *)
CCI = CC //. {c11 → 2 μ + λ, c22 → c11, c33 → c11, c12 → λ, c13 → c12, c23 → c12, c44 → c11 - c12,
    c55 → c44, c66 → c44, c14 → 0, c15 → c14, c16 → c14, c24 → c14, c25 → c14, c26 → c14,
    c34 → c14, c35 → c14, c36 → c14, c44 → c14, c45 → c14, c46 → c14, c56 → c14};
CCI // MatrixForm
e = {e11, e22, e33, e12, e13, e23};
s = {s11, s22, 0, s12, 0, 0};
sr = CCI.e;
eq = {s[[3]] == sr[[3]], s[[5]] == sr[[5]], s[[6]] == sr[[6]]};
sol = Solve[eq, {e13, e23, e33}];
e13 = e13 /. sol[[1, 1]];
e23 = e23 /. sol[[1, 2]];
e33 = e33 /. sol[[1, 3]];
```

$$\begin{pmatrix} \lambda + 2\,\mu & \lambda & \lambda & 0 & 0 & 0 \\ \lambda & \lambda + 2\,\mu & \lambda & 0 & 0 & 0 \\ \lambda & \lambda & \lambda + 2\,\mu & 0 & 0 & 0 \\ 0 & 0 & 0 & 2\,\mu & 0 & 0 \\ 0 & 0 & 0 & 0 & 2\,\mu & 0 \\ 0 & 0 & 0 & 0 & 0 & 2\,\mu \end{pmatrix}$$

sr // Simplify // MatrixForm

$$
\begin{pmatrix}
\frac{2\,\mu\,\left(e22\,\lambda + 2\,e11\,\left(\lambda+\mu\right)\right)}{\lambda+2\,\mu} \\
\frac{2\,\mu\,\left(e11\,\lambda + 2\,e22\,\left(\lambda+\mu\right)\right)}{\lambda+2\,\mu} \\
0 \\
2\,e12\,\mu \\
0 \\
0
\end{pmatrix}
$$