• Assumptions of Theorem 2.13 ($\Lambda = \Lambda_c$):

1) Standard Assumptions (2.3):

OK • $F \in X^*$, $G \in \Delta^* = \Lambda$ (mmc) OK

OK • $a(\cdot,\cdot)$, $b(\cdot,\cdot)$ ✝ (mmc) OK

• LBB-condition: $\longrightarrow$ nontrivial OK

(26) $$\sup_{v \in H^1_{0,\Gamma_u}(\Omega)} \frac{(\operatorname{div} v, p)_0}{\|v\|_1} \geq \beta_1 \|p\|_0 \quad \forall p \in L_2(\Omega)$$

OK $\Rightarrow$ The LBB-condition (26) is completely equivalent to the LBB-condition for the STOKES problem! OK

• $a(\cdot,\cdot)$ is even X-elliptic, i.e.

OK $$a(v,v) = 2\mu \|\varepsilon(v)\|_0^2 \geq 2\mu\, c_{K,2}^2 \|v\|_1^2 \quad \forall v \in X$$

↑ Lemma 3.5 (KORN 2) OK

OK 2) $a(v,v) \geq 0 \;\forall v \in X$ and $a(v,v) > 0 \;\forall v \neq 0$,
$|a(u,v)| \leq |u|\,|v| \;\forall u,v \in X$, with $|u|^2 = a(u,u)$.

OK 3) $c(\cdot,\cdot) = (\cdot,\cdot)_0 : \Lambda \times \Lambda \longrightarrow \mathbb{R}$:

• $c(p,q) = c(q,p) \;\forall p,q \in \Lambda$,

• $c(q,q) = \|q\|_0^2 \geq 0 \;\forall q \in \Lambda$, OK

• $|c(p,q)| \leq 1 \cdot \|p\|_0 \|q\|_0 \;\forall p,q \in \Lambda$

• **Theorem 2.3** $\Rightarrow$

1. $L = L(t) : X \times \Lambda \to X^* \times \Lambda^*$ isomorphism, i.e. $\exists!\,(u,p) \in X \times \Lambda$: (24)
2. $\|L^{-1}(t)\|_{L(X^* \times \Lambda^*, X \times \Lambda)} \leq c \neq c(t)$

⇓ see T17

$$L(t) := \begin{bmatrix} A & B^T \\ B & -t^2 C \end{bmatrix}$$