

■ Excercise 3.8:

Show that in the case of the second BVP (= Neumann BVP: $\Gamma_t = \Gamma$) the primal variational problem (2) \equiv (3) is solvable iff

$$\langle F, v \rangle = 0 \quad \forall v \in \mathcal{R}.$$

If this solvability condition is fulfilled, then the solution is uniquely defined up to rigid body motions.

Hint: Fredholm's theory!
(see also Nu I)