

## Static admissibility #2

We consider a prismatic domain with a Cartesian coordinate system  $(\underline{O}, \underline{e}_1, \underline{e}_2, \underline{e}_3)$ .

The domain is clamped over the plane  $(z=0)$ . The top surface is subjected to a uniform density of tractions (intensity  $T$  about direction  $\underline{e}_1$ ). The other surfaces are free of traction and body forces are neglected.

**Question:** Write all the equations defining static admissibility for  $\underline{\underline{\sigma}}$  and expand them.

**Question:** Clearly define the set of statically admissible stress fields,  $S^{ad}$ .

**Question:** Can the following stress field be a viable solution for the problem:

$$\sigma_{13} = \sigma_{31} = T \quad ; \quad \sigma_{ij} = 0 \quad otherwise \quad (1)$$

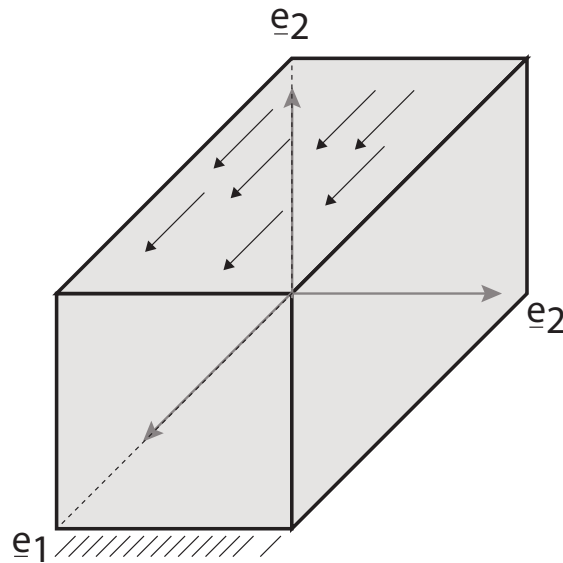


Figure 1: