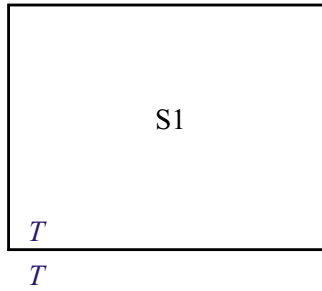


## 1.9 Thermodynamic Contacts: A system in thermal equilibrium



**S2: The world, a heat bath, ...**

Exchange of heat energy  $\Delta Q$

- $T_1 = T_2 = T$
- fixed volume  $V$
- fixed particle number  $N$

**Controlled by the system:**

- $p$ : pressure
- $\mu$ : chemical potential
- $S$ : entropy !!!

- Examples:
- many solids ( $V$  fixed)
  - gas in a fixed volume