



# Section Measures

## 1 Why

Toward a theory of iterated integrals, we need to know the function measuring a section is integrable.

## 2 Results

**Proposition 1.** *Let  $(X, \mathcal{A}, \mu)$  and  $(Y, \mathcal{B}, \nu)$  be sigma-finite measurable spaces. Let  $E \in \mathcal{A} \times \mathcal{B}$ . The function  $x \mapsto \nu(E_x)$  is  $\mathcal{A}$ -measurable and the function  $y \mapsto \mu(E^y)$  is  $\mathcal{B}$ -measurable.*

*Proof.* TODO

□