



## Signed Set Decomposition Existence

### 1 Why

Does a signed-set decomposition exist for any signed measure?

### 2 Result

The answer is yes.

**Proposition 1.** *Let  $(X, \mathcal{A})$  be a measurable space. Let  $\mu : \mathcal{A} \rightarrow [-\infty, \infty]$  be a signed measure. There exists a signed-set decomposition of  $X$  under  $\mu$ .*

*Proof.* TODO

□

#### 2.1 Uniqueness