



## Affine Hulls

### 1 Why

### 2 Definition

The *affine hull* of a set in  $n$ -dimensional space is the intersection of the collection of affine sets which contain it.

#### 2.1 Notation

We denote the affine hull of  $S$  by **aff**  $S$ .

**Proposition 1.** *The affine hull of  $S \subset \mathbf{R}^n$  consists of all vectors which can be expressed as*

$$\lambda_1 x_1 + \lambda_2 x_2 \cdots + \lambda_m x_m$$

*such that  $x_i \in S$  and  $\sum_i \lambda_i = 1$ .*