



## Matrix Eigenvalues

### 1 Why

TODO

### 2 Definition

Let  $A \in \mathbf{R}^{n \times n}$ . If there exists  $x \in \mathbf{R}^n$  and  $\alpha \in \mathbf{R}$  with  $|x| = 1$  such that

$$Ax = \alpha x$$

for