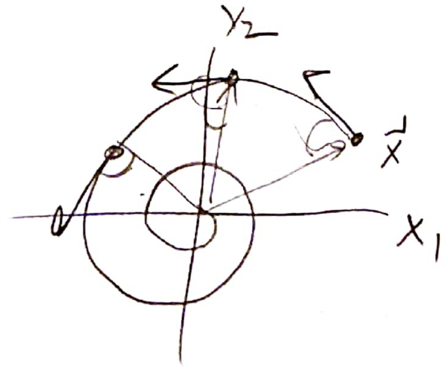
Know eigenvalue ⇒ Find eigenvector

Consider unknowns as n eigenvectors rather than n^2 entries of A

$\frac{d}{dt}\vec{x} = A\vec{x}$ $\quad$ A 2x2

$\lambda_1, \lambda_2 = re^{\pm j\theta}$

$\frac{d}{dt}\vec{x}$, $\vec{x}$



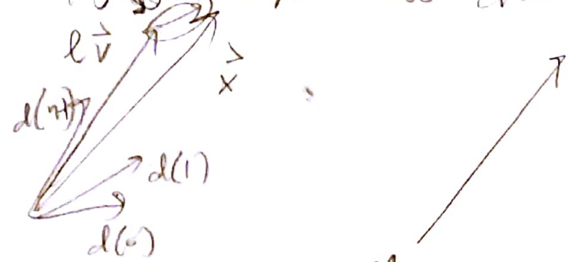
$\vec{x} \sim \vec{v}$ (eigenvector $\quad$ Assuming that A is diagonal

A (can possibly rotate)

↳ will off large eigenvector, rest will decay

α_i → projection of eigenvectors in direction/components d.

decaying → small , $\vec{x}$ and $l\vec{v}$ close



waiting doesn't put stuff in the stable eigendirections

Least sq where we look @ other e_i
as noise

$$\vec{x}(t) = [\Lambda^t x(0)]^T \vec{d}(t) + \sum [\Lambda^{t-i} \vec{u}(t)]^T \vec{d}(t)$$

X_i discarded

$$\vec{x}(t) \approx (\lambda \vec{e}_1 \vec{e}_1^T \vec{x}(0))^T \vec{d}(t) + \sum [(\lambda \vec{e}_1 \vec{e}_1^T)^{t-i} \vec{u}(t)]^T \vec{d}(t)$$

$$\vec{x}(t) \approx \lambda \vec{x}^T(0) \vec{e}_1 \vec{e}_1^T \vec{d}(t) + \sum [\lambda^{t-1} \vec{e}_1 \vec{e}_1^T \vec{u}_1(t)]^T \vec{d}(t)$$

$$\vec{x}(t) \approx \lambda \vec{x}^T(0) \vec{e}_1 \vec{e}_1^T \vec{d}(t) + \sum \lambda^{t-1} \vec{u}_1^T(t) \vec{e}_1 \vec{e}^T \vec{d}(t)$$

$$\vec{e}_1 = \underline{\sum \alpha_i \vec{d}(i)}$$ → make $\vec{d}$ usual orthonormal basis

$$\lambda \vec{x}^T(0) \vec{e}_1 \alpha$$

What happens if we don't project to just vector $\vec{d}(i)$ but multivector $\vec{d}(i) \wedge \cdot \wedge \cdot \wedge$

Equivalence of observation
⇒ different perspective