Recap

- A coupled linear set of ODEs can be represented by a matrix $\mathbf{M}$.

- Eigenvectors of $\mathbf{M}$ determine directions along which time evolution is in the form of a single exponential with the eigenvalue as the rate.

- For symmetric matrices the eigenvalues are real and the eigenvectors can be arranged as an orthonormal set, such that with $\vec{e}^{\beta} \cdot \vec{e}^{\alpha} = \delta_{\alpha\beta}$.

- Functions of a matrix can be represented using a decomposition in terms of eigenvectors and eigenvalues.