

**2023-02-17**

Suppose  $T$  is a symmetric tridiagonal matrix

$$T = \begin{bmatrix} \alpha_1 & \beta_1 & & & & & \\ \beta_1 & \alpha_2 & \beta_2 & & & & \\ & \beta_2 & \alpha_3 & \beta_3 & & & \\ & & \ddots & \ddots & \ddots & & \\ & & & \beta_{n-2} & \alpha_{n-1} & \beta_{n-1} & \\ & & & & \beta_{n-1} & \alpha_n & \end{bmatrix}$$

How would we overwrite the vector  $a$  of diagonal entries of  $T$  and the vector  $b$  of off-diagonal entries with the diagonal and off-diagonal entries of the Cholesky factor of  $T$ ?