

## ORTHOGONAL TRIANGULAR DECOMPOSITION

## Why

Well, least squares, for instance.<sup>1</sup>

## Definition

An orthogonal triangular decomposition (or orthogonal triangular factorization) of a  $A \in \mathbb{C}^{m \times n}$  with  $m \geq n$  is an ordered pair of matrices (Q, R) where Q is orthogonal and R is upper triangular and

$$A = QR$$
.

This is universally known as a QR factorization or QR decomposition.

<sup>&</sup>lt;sup>1</sup>Future editions will expand this description.

