Why

Well, least squares, for instance.[1]

Definition

An *orthogonal triangular decomposition* (or *orthogonal triangular factorization*) of a $A \in \mathbf{C}^{m \times n}$ 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.*

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[1]Future editions will expand this description.

Orthogonal Triangular Decomposition

Matrices

Real Matrices

Vectors

Real Linear Equations

Linear Functions

Real Vectors

Arrays

N-Dimensional Space

Plane Vector Sums and Differences

Space Vectors

Distance

Plane Vectors

Complex Numbers

Space Distance

Real Arithmetic

Absolute Value

Plane Distance

Real Multiplicative Inverse

Interval Length

Real Products

Real Space

Intervals

Real Additive Inverse

Real Line

Rational Multiplicative Inverse

Rational Arithmetic

Real Sums

Real Order

Real Summation

Integral Line

Rational Order

Fields

Rational Sums

Real Numbers

Natural Summation

Geometry

Rings

Rational Numbers

Lists

Integer Arithmetic

Natural Fractions

Set Numbers

Direct Products

Integer Products

Natural Multiplicative Identity

Natural Additive Identity

Finite Sets

Identity Elements

Equivalent Sets

Inverse Elements

Integer Sums

Integer Order

Natural Arithmetic

Natural Powers

Natural Equations

Element Functions

Function Inverses

Comparisons

Family Operations

Family Unions and Intersections

Integer Numbers

Natural Products

Order

Equations

Operations

Function Composites

Function Images

Families

Equivalence Relations

Natural Sums

Natural Order

Functions

Converse Relations

Recursion Theorem

Relations

Peano Axioms

Ordered Pair Projections

Natural Induction

Set Products

Natural Numbers

Generalized Set Dualities

Set Powers

Set Symmetric Differences

Partitions

Intersection of Empty Set

Successor Sets

Set Dualities

Unordered Triples

Set Unions and Intersections

Set Complements

Set Intersections

Pair Unions

Ordered Pairs

Set Differences

Set Unions

Pair Intersections

Empty Set

Unordered Pairs

Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Identities

Sets

Names

Letters

Objects