API Collection

Vector squaring functions

Compute the square, signed square, or squared magnitude of the elements in a vector.

Topics

Single-Vector Squaring

The functions in this group compute the square of each element in a vector or the square of the magnitude of each element in a complex vector.

`static func square<U>(U) -> [Double]`

Returns a double-precision array containing the square of each element in the supplied vector.

`static func square<U>(U) -> [Float]`

Returns a single-precision array containing the square of each element in the supplied vector.

`static func square<U, V>(U, result: inout V)`

Calculates the square of each element in the supplied double-precision vector.

`static func square<U, V>(U, result: inout V)`

Calculates the square of each element in the supplied single-precision vector.

`static func signedSquare<U>(U) -> [Double]`

Returns a double-precision array containing the signed square of each element in the supplied vector.

`static func signedSquare<U>(U) -> [Float]`

Returns a single-precision array containing the signed square of each element in the supplied vector.

`static func signedSquare<U, V>(U, result: inout V)`

Calculates the signed square of each element in the supplied double-precision vector.

`static func signedSquare<U, V>(U, result: inout V)`

Calculates the signed square of each element in the supplied single-precision vector.

`static func squareMagnitudes<V>(DSPSplitComplex, result: inout V)`

Calculates the square magnitude of each element in the supplied single-precision complex vector.

`static func squareMagnitudes<V>(DSPDoubleSplitComplex, result: inout V)`

Calculates the square magnitude of each element in the supplied double-precision complex vector.

`vDSP_vsq`

Computes the squared value of each element in the supplied single-precision vector.

`vDSP_vsqD`

Computes the squared value of each element in the supplied double-precision vector.

`vDSP_vssq`

Computes the signed squared value of each element in the supplied single-precision vector.

`vDSP_vssqD`

Computes the signed squared value of each element in the supplied double-precision vector.

`vDSP_zvmags`

Computes the squared magnitude value of each element in the supplied complex single-precision vector.

`vDSP_zvmagsD`

Computes the squared magnitude value of each element in the supplied complex double-precision vector.

`vDSP_zvmgsa`

Complex vector magnitudes square and add; single precision.

`vDSP_zvmgsaD`

Complex vector magnitudes square and add; double precision.

See Also

Single-vector arithmetic functions

- Absolute and negation functions

  Compute the absolute or negated value of each element in a vector.

- Integration functions

  Compute the running sum, Simpson, or trapezoidal integration of a vector.

- Clipping, limit, and threshold operations

  Apply clipping, limit, or threshold rules to the elements in a vector.

- Normalization functions

  Compute the mean and standard deviation of a vector and calculate new elements to have a zero mean and a unit standard deviation.

- Phase computation functions

  Calculate the element-wise phase values, in radians, of a complex vector.

- Complex conjugation functions

  Calculate the complex conjugate of the elements in a vector.

- Fractional part extraction

  Truncate the elements of a vector to a fraction.

- Zero crossing search

  Count and find the zero crossings in a vector.