

mathieedoubtrans

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Chapter 1

mathieeedoubtrans

1.1 mathieeedoubtrans.doc

IEEEEDPAcos()	IEEEEDPExp()	IEEEEDPSin()	IEEEEDPTanh()
IEEEEDPAsin()	IEEEEDPFieee()	IEEEEDPSincos()	IEEEEDPTieee()
IEEEEDPAtan()	IEEEEDPLog()	IEEEEDPSinh()	
IEEEEDPCos()	IEEEEDPLog10()	IEEEEDPSqrt()	
IEEEEDPCosh()	IEEEEDPPow()	IEEEEDPTan()	

1.2 mathieeedoubtrans.library/IEEEEDPAcos

NAME

IEEEEDPAcos -- compute the arc cosine of a number

SYNOPSIS

```
x = IEEEEDPAcos( y );  
d0/d1          d0/d1
```

```
double x,y;
```

FUNCTION

Compute arc cosine of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPCos(), IEEEEDPAtan(), IEEEEDPAsin()

1.3 mathieeedoubtrans.library/IEEEEDPAsin

NAME

IEEEEDPAsin -- compute the arcsine of a number

SYNOPSIS

```
x = IEEEEDPAsin( y );  
d0/d1          d0/d1
```

```
double x,y;
```

FUNCTION

Compute the arc sine of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPSin(), IEEEEDPAtan(), IEEEEDPACos()

1.4 mathieeedoubtrans.library/IEEEEDPAtan

NAME

IEEEEDPAtan -- compute the arctangent of a floating point number

SYNOPSIS

```
x = IEEEEDPAtan( y );  
d0/d1          d0/d1
```

```
double x,y;
```

FUNCTION

Compute arctangent of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPTan(), IEEEEDPAsin(), IEEEEDPACos()

1.5 mathieeedoubtrans.library/IEEEEDPCos

NAME

IEEEDPCos -- compute the cosine of a floating point number

SYNOPSIS

```
x = IEEEDPCos( y );  
d0/d1          d0/d1
```

```
double x,y;
```

FUNCTION

Compute cosine of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEDPAcos(), IEEEDPSin(), IEEEDPTan()

1.6 mathieeedoubtrans.library/IEEEDPCosh

NAME

IEEEDPCosh -- compute the hyperbolic cosine of a floating point number

SYNOPSIS

```
x = IEEEDPCosh( y );  
d0/d1          d0/d1
```

```
double x,y;
```

FUNCTION

Compute hyperbolic cosine of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEDPSinh(), IEEEDPTanh()

1.7 mathieeedoubtrans.library/IEEEDPExp

NAME

IEEEDPExp -- compute the exponential of e

SYNOPSIS

```
x = IEEEEDPExp( y );
d0/d1          d0/d1
```

```
double x,y;
```

FUNCTION

Compute e^y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPLog()

1.8 mathieeedoubtrans.library/IEEEDPFieee

NAME

IEEEDPFieee -- convert IEEE single to IEEE double

SYNOPSIS

```
x = IEEEDPFieee( y );
d0/d1          d0
```

```
float y;
```

```
double x;
```

FUNCTION

Convert IEEE single precision number to IEEE double precision.

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPTieee()

1.9 mathieeedoubtrans.library/IEEEDPLog

NAME

IEEEDPLog -- compute the natural logarithm of a floating point number

SYNOPSIS

```

    x    = IEEEEDPLog( y );
d0/d1      d0/d1

```

```
double x,y;
```

FUNCTION

Compute $\ln(y)$ in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPExp()

1.10 mathieedoubtrans.library/IEEEEDPLog10

NAME

IEEEEDPLog10 -- compute logarithm base 10 of a number

SYNOPSIS

```

    x    = IEEEEDPLog10( y );
d0/d1      d0/d1

```

```
double x,y;
```

FUNCTION

Compute the logarithm base 10 of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPLog()

1.11 mathieedoubtrans.library/IEEEEDPPow

NAME

IEEEEDPPow -- raise a number to another number power

SYNOPSIS

```

    z    = IEEEEDPPow( x , y );
d0/d1      d2/d3 d0/d1

```

```
double x,y,z;
```

FUNCTION

Compute y^x in IEEE double precision

INPUTS

x - IEEE double precision floating point value
y - IEEE double precision floating point value

RESULT

z - IEEE double precision floating point value

BUGS

SEE ALSO

1.12 mathieedoubtrans.library/IEEEDPSin

NAME

IEEEDPSin -- compute the sine of a floating point number

SYNOPSIS

```
x = IEEEDPSin( y );
d0/d1      d0/d1
```

```
double x,y;
```

FUNCTION

Compute sine of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEDPAsin(), IEEEDPTan(), IEEEDPCos()

1.13 mathieedoubtrans.library/IEEEDPSincos

NAME

IEEEDPSincos -- compute the arc tangent of a floating point number

SYNOPSIS

```
x = IEEEDPSincos( z , y );
d0/d1      a0 d0/d1
```

```
double x,y,*z;
```

FUNCTION

Compute sin and cosine of y in IEEE double precision.
Store the cosine in $*z$. Return the sine of y .

INPUTS

y - IEEE double precision floating point value
 z - pointer to IEEE double precision floating point number

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPSin(), IEEEEDPCos()

1.14 mathieeedoubtrans.library/IEEEEDPSinh

NAME

IEEEEDPSinh -- compute the hyperbolic sine of a floating point number

SYNOPSIS

```
x = IEEEEDPSinh( y );  
d0/d1          d0/d1
```

```
double x,y;
```

FUNCTION

Compute hyperbolic sine of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPCosh, IEEEEDPTanh

1.15 mathieeedoubtrans.library/IEEEEDPSqrt

NAME

IEEEEDPSqrt -- compute the square root of a number

SYNOPSIS

```
x = IEEEEDPSqrt( y );  
d0/d1          d0/d1
```

```
double x,y;
```

FUNCTION

Compute square root of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

1.16 mathieeedoubtrans.library/IEEEDPTan

NAME

IEEEDPTan -- compute the tangent of a floating point number

SYNOPSIS

```
x = IEEEDPTan( y );  
d0/d1      d0/d1
```

```
double x,y;
```

FUNCTION

Compute tangent of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEDPatan(), IEEEDPSin(), IEEEDPCos()

1.17 mathieeedoubtrans.library/IEEEDPTanh

NAME

IEEEDPTanh -- compute the hyperbolic tangent of a floating point number

SYNOPSIS

```
x = IEEEDPTanh( y );  
d0/d1      d0/d1
```

```
double x,y;
```

FUNCTION

Compute hyperbolic tangent of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPSinh(), IEEEEDPCosh()

1.18 mathieeedoubtrans.library/IEEEEDPTieee

NAME

IEEEEDPTieee -- convert IEEE double to IEEE single

SYNOPSIS

```
x      = IEEEEDPTieee( y );
d0     d0/d1
```

```
double y;
float  x;
```

FUNCTION

Convert IEEE double precision number to IEEE single precision.

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEEEDPFieee()