

mathieeedoubtrans

COLLABORATORS

	<i>TITLE :</i> mathieeedoubtrans		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		July 19, 2024	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

1	mathieeedoubtrans	1
1.1	mathieeedoubtrans.doc	1
1.2	mathieeedoubtrans.library/IEEEEDPAcos	1
1.3	mathieeedoubtrans.library/IEEEEDPAsin	2
1.4	mathieeedoubtrans.library/IEEEEDPAtan	2
1.5	mathieeedoubtrans.library/IEEEEDPCos	3
1.6	mathieeedoubtrans.library/IEEEEDPCosh	3
1.7	mathieeedoubtrans.library/IEEEEDPExp	4
1.8	mathieeedoubtrans.library/IEEEEDPFieee	4
1.9	mathieeedoubtrans.library/IEEEEDPLog	5
1.10	mathieeedoubtrans.library/IEEEEDPLog10	5
1.11	mathieeedoubtrans.library/IEEEEDPPow	6
1.12	mathieeedoubtrans.library/IEEEEDPSin	6
1.13	mathieeedoubtrans.library/IEEEEDPSincos	6
1.14	mathieeedoubtrans.library/IEEEEDPSinh	7
1.15	mathieeedoubtrans.library/IEEEEDPSqrt	7
1.16	mathieeedoubtrans.library/IEEEEDPTan	8
1.17	mathieeedoubtrans.library/IEEEEDPTanh	8
1.18	mathieeedoubtrans.library/IEEEEDPTieee	9

Chapter 1

mathieeedoubtrans

1.1 mathieeedoubtrans.doc

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

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

IEEEEDPCos -- compute the cosine of a floating point number

SYNOPSIS

```
x = IEEEEDPCos( 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

IEEEEDPACos(), IEEEEDPSin(), IEEEEDPTan()

1.6 mathieeedoubtrans.library/IEEEEDPCosh

NAME

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

SYNOPSIS

```
x = IEEEEDPCosh( 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
IEEEEDPSinh(), IEEEEDPTanh()

1.7 mathieeedoubtrans.library/IEEEEDPExp

NAME
IEEEEDPExp -- 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/IEEEEDPLog

NAME
IEEEEDPLog -- 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 mathieeedoubtrans.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 mathieeedoubtrans.library/IEEEDPPow

NAME

IEEEDPPow -- raise a number to another number power

SYNOPSIS

```
z = IEEEDPPow( 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 mathieeedoubtrans.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 mathieeedoubtrans.library/IEEEDPSincos

NAME

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

SYNOPSIS

```
x = IEEEEDPSincos( 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
 $x = \text{IEEEEDPSqrt}(y);$
 $d0/d1 \quad d0/d1$

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/IEEEEDPTan

NAME
 IEEEEDPTan -- compute the tangent of a floating point number

SYNOPSIS
 $x = \text{IEEEEDPTan}(y);$
 $d0/d1 \quad d0/d1$

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
 IEEEEDPAtan(), IEEEEDPSin(), IEEEEDPCos()

1.17 mathieeedoubtrans.library/IEEEEDPTanh

NAME
 IEEEEDPTanh -- compute the hyperbolic tangent of a floating point number

```
SYNOPSIS
    x = IEEEEDPTanh( 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()
```
