

# Special functions :

## continued fraction and series representations

Handbook	Software
A. Cuyt	F. Backeljauw
W. B. Jones	S. Becuwe
V. Petersen	M. Colman
B. Verdonk	A. Cuyt
H. Waadeland	T. Docx

### Function categories

**Elementary functions**

**Gamma function and related functions**

**Error function and related integrals**

**erf**

**dawson**

**erfc**

**Fresnel C**

**Fresnel S**

**Exponential integrals and related functions**

**Hypergeometric functions**

**Confluent hypergeometric functions**

**Bessel functions**

### Error function and related integrals » erfc » approximate

#### Representation

$$(ER.2.23) \quad \text{erfc}(z) = \frac{e^{-z^2}}{\sqrt{\pi}} \left( \frac{2z}{1+2z^2} + \sum_{m=2}^{\infty} \left( \frac{-(2m-3)(2m-2)}{4m-3+2z^2} \right) \right), \quad \Re z > 0$$

#### Input

<b>rhs</b>	J-fraction
<b>parameters</b>	none
<b>base</b>	10 <input type="button" value="▼"/>
<b>digits</b>	46 (5 ≤ digits ≤ 999)
<b>approximant</b>	13 (1 ≤ approximant ≤ 999)
<b>z</b>	6.5
<b>tail estimate</b>	<input checked="" type="radio"/> none <input type="radio"/> standard <input type="radio"/> improved <input type="radio"/> user defined (singular form) <input type="text"/>

#### Output

<b>approximant</b>	3.842148327120647469875804525852808522764701220e-20
<b>absolute error</b>	1.792e-46
<b>relative error</b>	4.663e-27
<b>tail estimate</b>	0



© Copyright 2008 Universiteit Antwerpen

contact@cfhblive.ua.ac.be