"RayleighRV(1)"

$$[x \mapsto 2\,x\mathrm{e}^{-x^2}]$$

$$t \mapsto t^2$$

Probability Distribution Function

$$f(x) = \mathrm{e}^{-x}$$

Cumulative Distribution Function

$$F(x) = 1 - \mathrm{e}^{-x}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto -\ln(1-s)]$$

Survivor Function

$$S(x) = \mathrm{e}^{-x}$$

Hazard Function

$$h(x) = 1$$

Mean

$$mu = 1$$

Variance

$$sigma^2 = 1$$

Moment Function

$$m(x) = \Gamma(r+1)$$

Moment Generating Function

$$\lim_{x\to\infty} \frac{\mathrm{e}^{x(t-1)} - 1}{t-1}_{1}$$

$$t \mapsto \sqrt{t}$$

Probability Distribution Function

$$f(x) = 4\,x^3 \mathrm{e}^{-x^4}$$

Cumulative Distribution Function

$$F(x) = 1 - \mathrm{e}^{-x^4}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \sqrt[4]{-\ln(1-s)}]$$

Survivor Function

$$S(x) = \mathrm{e}^{-x^4}$$

Hazard Function

$$h(x) = 4\,x^3$$

Mean

$$mu = 1/4\,\frac{\pi\sqrt{2}}{\Gamma(3/4)}$$

Variance

$$sigma^2 = 1/2\,\sqrt{\pi} - 1/8\,\frac{\pi^2}{(\Gamma(3/4))^2}$$

Moment Function

$$m(x) = \Gamma(r/4+1)$$

Moment Generating Function

$$1/8\,\frac{1}{\Gamma(3/4)\sqrt{\pi}}\left((\Gamma(3/4))^2\,{}_0\mathrm{F}_2(\ ;5/4,3/2;\ \frac{t^4}{256})t^3\sqrt{\pi} + 2\,\pi^{3/2}\sqrt{2}\,{}_0\mathrm{F}_2(\ ;1/2,3/4;\ \frac{t^4}{256})t + 2\,\pi\,\Gamma($$

$$t \mapsto t^{-1}$$

Probability Distribution Function

$$f(x) = 2\,\frac{1}{x^3}\mathrm{e}^{-x^{-2}}$$

Cumulative Distribution Function

$$F(x) = \mathrm{e}^{-x^{-2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = ERROR(IDF) : Couldnotfindtheappropriateinverse$$

$$[s \mapsto \frac{1}{\sqrt{-\ln(s)}}]$$

Survivor Function

$$S(x) = 1 - \mathrm{e}^{-x^{-2}}$$

Hazard Function

$$h(x) = -2\,\frac{1}{x^3}\mathrm{e}^{-x^{-2}}\left(-1 + \mathrm{e}^{-x^{-2}}\right)^{-1}$$

Mean

$$mu = \sqrt{\pi}$$

Variance

$$sigma^2 = \infty$$

Moment Function

$$m(x) = \Gamma\left(-r/2 + 1\right)$$

Moment Generating Function

$$\frac{G_{0,3}^{3,0}\left(1/4\,t^2 \,\middle|\, {}_{1,1/2,0}\right)}{\sqrt{\pi}}{}_{1}$$

$$t \mapsto \arctan(t)$$

Probability Distribution Function

$$f(x) = 2\,\frac{\sin(x)}{(\cos(x))^3}\mathrm{e}^{-\frac{(\sin(x))^2}{(\cos(x))^2}}$$

Cumulative Distribution Function

$$F(x) = 1 - \mathrm{e}^{-\frac{(\sin(x))^2}{(\cos(x))^2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \arctan\left(\sqrt{-\ln\left(1-s\right)}\right)]$$

Survivor Function

$$S(x) = \mathrm{e}^{-\frac{(\sin(x))^2}{(\cos(x))^2}}$$

Hazard Function

$$h(x) = 2\,\frac{\sin\left(x\right)}{\left(\cos\left(x\right)\right)^3}$$

Mean

$$mu = 2\int_0^{\pi/2} \frac{\sin\left(x\right)x}{\left(\cos\left(x\right)\right)^3}\mathrm{e}^{\frac{-1+\cos(2\,x)}{\cos(2\,x)+1}}\,\mathrm{d}x$$

Variance

$$sigma^2 = 2\int_0^{\pi/2} \frac{\sin\left(x\right)x^2}{\left(\cos\left(x\right)\right)^3}\mathrm{e}^{\frac{-1+\cos(2\,x)}{\cos(2\,x)+1}}\,\mathrm{d}x - 4\left(\int_0^{\pi/2} \frac{\sin\left(x\right)x}{\left(\cos\left(x\right)\right)^3}\mathrm{e}^{\frac{-1+\cos(2\,x)}{\cos(2\,x)+1}}\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_0^{\pi/2} 2\,\frac{x^r\sin\left(x\right)}{\left(\cos\left(x\right)\right)^3}\mathrm{e}^{-\frac{(\sin(x))^2}{(\cos(x))^2}}\,\mathrm{d}x$$

Moment Generating Function

$$2\int_0^{\pi/2} \frac{\sin\left(x\right)}{\left(\cos\left(x\right)\right)^3}\mathrm{e}^{\frac{tx\cos(2\,x)+tx+\cos(2\,x)-1}{\cos(2\,x)+1}}\,\mathrm{d}x_1$$

$$t \mapsto \mathrm{e}^t$$

Probability Distribution Function

$$f(x) = 2\,\frac{\ln\left(x\right)\mathrm{e}^{-(\ln(x))^2}}{x}$$

Cumulative Distribution Function

$$F(x) = 1 - \mathrm{e}^{-(\ln(x))^2}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathrm{e}^{\sqrt{\ln\left(-(-1+s)^{-1}\right)}}]$$

Survivor Function

$$S(x) = \mathrm{e}^{-(\ln(x))^2}$$

Hazard Function

$$h(x) = 2\,\frac{\ln(x)}{x}$$

Mean

$$mu = 1 + 1/2\,\sqrt{\pi}\mathrm{e}^{1/4}\mathrm{erf}\,(1/2) + 1/2\,\sqrt{\pi}\mathrm{e}^{1/4}$$

Variance

$$sigma^2 = \sqrt{\pi}\mathrm{eerf}\,(1)+\sqrt{\pi}\mathrm{e}-\sqrt{\pi}\mathrm{e}^{1/4}\mathrm{erf}\,(1/2)-\sqrt{\pi}\mathrm{e}^{1/4}-1/4\,\pi\,\mathrm{e}^{1/2}\,(\mathrm{erf}\,(1/2))^2-1/2\,\pi\,\mathrm{e}^{1/2}\mathrm{erf}\,(1/2)$$

Moment Function

$$m(x) = 1 + 1/2\,r\,\sqrt{\pi}\mathrm{e}^{1/4\,r^2}\mathrm{erf}\,(r/2) + 1/2\,r\,\sqrt{\pi}\mathrm{e}^{1/4\,r^2}$$

Moment Generating Function

$$\int_1^{\infty} 2\,\frac{\ln(x)\,\mathrm{e}^{tx-(\ln(x))^2}}{x}\,\mathrm{d}x_1$$

$$t \mapsto \ln(t)$$

Probability Distribution Function

$$f(x) = 2\,\mathrm{e}^{2\,x-\mathrm{e}^{2\,x}}$$

Cumulative Distribution Function

$$F(x) = 1 - \mathrm{e}^{-\mathrm{e}^{2\,x}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto 1/2\,\ln(-\ln(1-s))]$$

Survivor Function

$$S(x) = \mathrm{e}^{-\mathrm{e}^{2\,x}}$$

Hazard Function

$$h(x) = 2\,\mathrm{e}^{2\,x}$$

Mean

$$mu = \int_{-\infty}^{\infty} 2\,x\mathrm{e}^{2\,x-\mathrm{e}^{2\,x}}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_{-\infty}^{\infty} 2\,x^2\mathrm{e}^{2\,x-\mathrm{e}^{2\,x}}\,\mathrm{d}x - \left(\int_{-\infty}^{\infty} 2\,x\mathrm{e}^{2\,x-\mathrm{e}^{2\,x}}\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 2\,x^r\,\mathrm{e}^{2\,x-\mathrm{e}^{2\,x}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_{-\infty}^{\infty} 2\,\mathrm{e}^{tx+2\,x-\mathrm{e}^{2\,x}}\,\mathrm{d}x_1$$

$$t \mapsto \mathrm{e}^{-t}$$

Probability Distribution Function

$$f(x) = -2\,\frac{\ln\left(x\right)\mathrm{e}^{-(\ln(x))^2}}{x}$$

Cumulative Distribution Function

$$F(x) = \mathrm{e}^{-(\ln(x))^2}$$

Inverse Cumulative Distribution Function

$$F^{-1} = ERROR(IDF) : Couldnotfindtheappropriateinverse$$

$$[s \mapsto \mathrm{e}^{-\sqrt{-\ln(s)}}]$$

Survivor Function

$$S(x) = 1 - \mathrm{e}^{-(\ln(x))^2}$$

Hazard Function

$$h(x) = 2\,\frac{\ln(x)\,\mathrm{e}^{-(\ln(x))^2}}{x\left(-1+\mathrm{e}^{-(\ln(x))^2}\right)}$$

Mean

$$mu = 1 + 1/2\,\sqrt{\pi}\mathrm{e}^{1/4}\mathrm{erf}\,(1/2) - 1/2\,\sqrt{\pi}\mathrm{e}^{1/4}$$

Variance

$$sigma^2 = \sqrt{\pi}\mathrm{eerf}\,(1) - \sqrt{\pi}\mathrm{e} - \sqrt{\pi}\mathrm{e}^{1/4}\mathrm{erf}\,(1/2) + \sqrt{\pi}\mathrm{e}^{1/4} - 1/4\,\pi\,\mathrm{e}^{1/2}\,(\mathrm{erf}\,(1/2))^2 + 1/2\,\pi\,\mathrm{e}^{1/2}\mathrm{erf}\,(1/2)$$

Moment Function

$$m(x) = 1 + 1/2\,r\,\sqrt{\pi}\mathrm{e}^{1/4\,r^2}\mathrm{erf}\,(r/2) - 1/2\,r\,\sqrt{\pi}\mathrm{e}^{1/4\,r^2}$$

Moment Generating Function

$$-2\int_0^1 \frac{\ln(x)\,\mathrm{e}^{tx-(\ln(x))^2}}{x}\,\mathrm{d}x_1$$

$$t \mapsto -\ln(t)$$

Probability Distribution Function

$$f(x) = 2\,\mathrm{e}^{-2\,x-\mathrm{e}^{-2\,x}}$$

Cumulative Distribution Function

$$F(x) = \mathrm{e}^{-\mathrm{e}^{-2\,x}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto -1/2\,\ln(-\ln(s))]$$

Survivor Function

$$S(x) = 1 - \mathrm{e}^{-\mathrm{e}^{-2\,x}}$$

Hazard Function

$$h(x) = -2\,\frac{\mathrm{e}^{-2\,x-\mathrm{e}^{-2\,x}}}{-1+\mathrm{e}^{-\mathrm{e}^{-2\,x}}}$$

Mean

$$mu = \int_{-\infty}^{\infty} 2\,x\mathrm{e}^{-2\,x-\mathrm{e}^{-2\,x}}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_{-\infty}^{\infty} 2\,x^2\mathrm{e}^{-2\,x-\mathrm{e}^{-2\,x}}\,\mathrm{d}x - \left(\int_{-\infty}^{\infty} 2\,x\mathrm{e}^{-2\,x-\mathrm{e}^{-2\,x}}\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 2\,x^r\mathrm{e}^{-2\,x-\mathrm{e}^{-2\,x}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_{-\infty}^{\infty} 2\,\mathrm{e}^{tx-2\,x-\mathrm{e}^{-2\,x}}\,\mathrm{d}x_1$$

$$t \mapsto \ln(t+1)$$

Probability Distribution Function

$$f(x) = 2\,\left(\mathrm{e}^{x}-1\right)\mathrm{e}^{-\mathrm{e}^{2\,x}+2\,\mathrm{e}^{x}+x-1}$$

Cumulative Distribution Function

$$F(x) = -\left(\mathrm{e}^{2\,\mathrm{e}^{x}-1}-\mathrm{e}^{\mathrm{e}^{2\,x}}\right)\mathrm{e}^{-\mathrm{e}^{2\,x}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto -\ln(2)+\ln\left(1+RootOf\left(\mathrm{e}^{\_Z}+s\mathrm{e}^{1/4\,(\_Z+1)^2}-\mathrm{e}^{1/4\,(\_Z+1)^2}\right)\right)]$$

Survivor Function

$$S(x) = \mathrm{e}^{-\mathrm{e}^{2\,x}+2\,\mathrm{e}^{x}-1}$$

Hazard Function

$$h(x) = 2\,\left(\mathrm{e}^{x}-1\right)\mathrm{e}^{x}$$

Mean

$$mu = \int_{0}^{\infty} 2\,x\,\left(\mathrm{e}^{x}-1\right)\mathrm{e}^{-\mathrm{e}^{2\,x}+2\,\mathrm{e}^{x}+x-1}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_0^\infty 2\,x^2\left(\mathrm{e}^x - 1\right)\mathrm{e}^{-\mathrm{e}^{2\,x}+2\,\mathrm{e}^x+x-1}\,\mathrm{d}x - \left(\int_0^\infty 2\,x\left(\mathrm{e}^x - 1\right)\mathrm{e}^{-\mathrm{e}^{2\,x}+2\,\mathrm{e}^x+x-1}\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_0^\infty 2\,x^r\left(\mathrm{e}^x - 1\right)\mathrm{e}^{-\mathrm{e}^{2\,x}+2\,\mathrm{e}^x+x-1}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 2\,\left(\mathrm{e}^x - 1\right)\mathrm{e}^{tx-\mathrm{e}^{2\,x}+2\,\mathrm{e}^x+x-1}\,\mathrm{d}x_1$$

$$t \mapsto \left(\ln\left(t+2\right)\right)^{-1}$$

Probability Distribution Function

$$f(x) = 2\,\frac{\mathrm{e}^{x^{-1}} - 2}{x^2}\mathrm{e}^{-\frac{1}{x}\left(\mathrm{e}^{2\,x^{-1}}x-4\,\mathrm{e}^{x^{-1}}x+4\,x-1\right)}$$

Cumulative Distribution Function

$$F(x) = \mathrm{e}^{-\mathrm{e}^{2\,x^{-1}}+4\,\mathrm{e}^{x^{-1}}-4}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \left(\ln\left(2+\sqrt{-\ln\left(s\right)}\right)\right)^{-1}]$$

Survivor Function

$$S(x) = 1 - \mathrm{e}^{-\mathrm{e}^{2\,x^{-1}}+4\,\mathrm{e}^{x^{-1}}-4}$$

Hazard Function

$$h(x) = -2\,\frac{\mathrm{e}^{x^{-1}} - 2}{x^2}\mathrm{e}^{\frac{1}{x}\left(-\mathrm{e}^{2\,x^{-1}}x+4\,\mathrm{e}^{x^{-1}}x-4\,x+1\right)}\left(-1+\mathrm{e}^{-\mathrm{e}^{2\,x^{-1}}+4\,\mathrm{e}^{x^{-1}}-4}\right)^{-1}$$

Mean

$$mu = 2\int_0^{\left(\ln(2)\right)^{-1}} \frac{\mathrm{e}^{x^{-1}} - 2}{x}\mathrm{e}^{\frac{1}{x}\left(-\mathrm{e}^{2\,x^{-1}}x+4\,\mathrm{e}^{x^{-1}}x-4\,x+1\right)}\,\mathrm{d}x$$

Variance

$$sigma^2 = 2\int_0^{(\ln(2))^{-1}} \left(\mathrm{e}^{x^{-1}} - 2\right) \mathrm{e}^{\frac{1}{x}\left(-\mathrm{e}^{2\,x^{-1}} x + 4\,\mathrm{e}^{x^{-1}} x - 4\,x + 1\right)}\,\mathrm{d}x - 4\left(\int_0^{(\ln(2))^{-1}} \frac{\mathrm{e}^{x^{-1}} - 2}{x} \mathrm{e}^{\frac{1}{x}\left(-\mathrm{e}^{2\,x^{-1}} x + 4}\right.$$

Moment Function

$$m(x) = \int_0^{(\ln(2))^{-1}} 2\,\frac{x^r \left(\mathrm{e}^{x^{-1}} - 2\right)}{x^2} \mathrm{e}^{-\frac{1}{x}\left(\mathrm{e}^{2\,x^{-1}} x - 4\,\mathrm{e}^{x^{-1}} x + 4\,x - 1\right)}\,\mathrm{d}x$$

Moment Generating Function

$$2\int_0^{(\ln(2))^{-1}} \frac{\mathrm{e}^{x^{-1}} - 2}{x^2} \mathrm{e}^{\frac{1}{x}\left(-\mathrm{e}^{2\,x^{-1}} x + t x^2 + 4\,\mathrm{e}^{x^{-1}} x - 4\,x + 1\right)}\,\mathrm{d}x_1$$

$$t \mapsto \tanh(t)$$

Probability Distribution Function

$$f(x) = -2\,\frac{\operatorname{arctanh}(x)\,\mathrm{e}^{-(\operatorname{arctanh}(x))^2}}{x^2 - 1}$$

Cumulative Distribution Function

$$F(x) = \frac{\sqrt[4]{\mathrm{e}^{(\ln(1-x))^2}} - \sqrt{(1-x)^{\ln(x+1)}}\,\mathrm{e}^{-1/4\,(\ln(x+1))^2}}{\sqrt[4]{\mathrm{e}^{(\ln(1-x))^2}}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = []$$

Survivor Function

$$S(x) = \frac{\sqrt{(x+1)^{\ln(1-x)}}\,\mathrm{e}^{-1/4\,(\ln(x+1))^2}}{\sqrt[4]{\mathrm{e}^{(\ln(1-x))^2}}}$$

Hazard Function

$$h(x) = -2\,\frac{\operatorname{arctanh}(x)\,\mathrm{e}^{1/4\,(\ln(x+1) - 2\operatorname{arctanh}(x))(\ln(x+1) + 2\operatorname{arctanh}(x))}\,\sqrt[4]{\mathrm{e}^{(\ln(1-x))^2}}}{\sqrt{(1-x)^{\ln(x+1)}}\,(x^2-1)}$$

Mean

$$mu = -2 \int_0^1 \frac{x \operatorname{arctanh}(x) \, \mathrm{e}^{-(\operatorname{arctanh}(x))^2}}{x^2 - 1} \, \mathrm{d}x$$

Variance

$$sigma^2 = -2 \int_0^1 \frac{x^2 \operatorname{arctanh}(x) \, \mathrm{e}^{-(\operatorname{arctanh}(x))^2}}{x^2 - 1} \, \mathrm{d}x - 4 \left(\int_0^1 \frac{x \operatorname{arctanh}(x) \, \mathrm{e}^{-(\operatorname{arctanh}(x))^2}}{x^2 - 1} \, \mathrm{d}x \right)^2$$

Moment Function

$$m(x) = \int_0^1 -2 \frac{x^r \operatorname{arctanh}(x) \, \mathrm{e}^{-(\operatorname{arctanh}(x))^2}}{x^2 - 1} \, \mathrm{d}x$$

Moment Generating Function

$$-2 \int_0^1 \frac{\operatorname{arctanh}(x) \, \mathrm{e}^{tx - (\operatorname{arctanh}(x))^2}}{x^2 - 1} \, \mathrm{d}x_1$$

$$t \mapsto \sinh(t)$$

Probability Distribution Function

$$f(x) = 2 \frac{\operatorname{arcsinh}(x) \, \mathrm{e}^{-(\operatorname{arcsinh}(x))^2}}{\sqrt{x^2 + 1}}$$

Cumulative Distribution Function

$$F(x) = 1 - \mathrm{e}^{-\left(\ln\left(-x + \sqrt{x^2+1}\right)\right)^2}$$

Inverse Cumulative Distribution Function

$$F^{-1} = ERROR(IDF) : Couldnotfindtheappropriateinverse$$

$$[s \mapsto 1/2 \left(\mathrm{e}^{2\sqrt{\ln\left(-(-1+s)^{-1}\right)}} - 1 \right) \mathrm{e}^{-\sqrt{\ln\left(-(-1+s)^{-1}\right)}}]$$

Survivor Function

$$S(x) = \mathrm{e}^{-\left(\ln\left(-x + \sqrt{x^2+1}\right)\right)^2}$$

Hazard Function

$$h(x) = 2\,\frac{\operatorname{arcsinh}(x)\,\mathrm{e}^{\left(\ln\left(-x+\sqrt{x^2+1}\right)-\operatorname{arcsinh}(x)\right)\left(\ln\left(-x+\sqrt{x^2+1}\right)+\operatorname{arcsinh}(x)\right)}}{\sqrt{x^2+1}}$$

Mean

$$mu = \int_0^\infty 2\,\frac{x\operatorname{arcsinh}(x)\,\mathrm{e}^{-(\operatorname{arcsinh}(x))^2}}{\sqrt{x^2+1}}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_0^\infty 2\,\frac{x^2\operatorname{arcsinh}(x)\,\mathrm{e}^{-(\operatorname{arcsinh}(x))^2}}{\sqrt{x^2+1}}\,\mathrm{d}x - \left(\int_0^\infty 2\,\frac{x\operatorname{arcsinh}(x)\,\mathrm{e}^{-(\operatorname{arcsinh}(x))^2}}{\sqrt{x^2+1}}\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_0^\infty 2\,\frac{x^r\operatorname{arcsinh}(x)\,\mathrm{e}^{-(\operatorname{arcsinh}(x))^2}}{\sqrt{x^2+1}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 2\,\frac{\operatorname{arcsinh}(x)\,\mathrm{e}^{tx-(\operatorname{arcsinh}(x))^2}}{\sqrt{x^2+1}}\,\mathrm{d}x_1$$

$$t \mapsto \operatorname{arcsinh}(t)$$

Probability Distribution Function

$$f(x) = 2\,\sinh(x)\,\mathrm{e}^{-(\sinh(x))^2}\cosh(x)$$

Cumulative Distribution Function

$$F(x) = \left(\mathrm{e}^{1/4\left(\mathrm{e}^{4x}+1\right)\mathrm{e}^{-2x}} - \mathrm{e}^{1/2}\right)\mathrm{e}^{-1/4\left(\mathrm{e}^{4x}+1\right)\mathrm{e}^{-2x}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = ERROR(IDF) : Couldnotfindtheappropriateinverse$$

$$[s \mapsto -1/2\,\ln\left(-2\,\ln(-s+1)+1-2\,\sqrt{\ln(-s+1)\,(\ln(-s+1)-1)}\right)]$$

Survivor Function

$$S(x) = \mathrm{e}^{-1/4\,\mathrm{e}^{2\,x}+1/2-1/4\,\mathrm{e}^{-2\,x}}$$

Hazard Function

$$h(x) = 2\,\sinh\left(x\right)\mathrm{e}^{-(\cosh(x))^2+1/2+1/4\,\mathrm{e}^{2\,x}+1/4\,\mathrm{e}^{-2\,x}}\cosh\left(x\right)$$

Mean

$$mu = \int_0^\infty \mathrm{e}^{1/2-1/2\,\cosh(2\,x)} x \sinh\left(2\,x\right)\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_0^\infty \mathrm{e}^{1/2-1/2\,\cosh(2\,x)} x^2 \sinh\left(2\,x\right)\,\mathrm{d}x - \left(\int_0^\infty \mathrm{e}^{1/2-1/2\,\cosh(2\,x)} x \sinh\left(2\,x\right)\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_0^\infty 2\,x^r \sinh\left(x\right)\mathrm{e}^{-(\sinh(x))^2}\cosh\left(x\right)\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty \mathrm{e}^{tx+1/2-1/2\,\cosh(2\,x)}\sinh\left(2\,x\right)\,\mathrm{d}x_1$$

$$t \mapsto \operatorname{csch}\left(t+1\right)$$

Probability Distribution Function

$$f(x) = 2\,\frac{\left(-1+\operatorname{arccsch}\left(x\right)\right)\mathrm{e}^{-(-1+\operatorname{arccsch}(x))^2}}{\sqrt{x^2+1}\,|x|}$$

Cumulative Distribution Function

$$F(x) = 2\int_0^x \frac{\left(-1+\operatorname{arccsch}\left(t\right)\right)\mathrm{e}^{-(-1+\operatorname{arccsch}(t))^2}}{\sqrt{t^2+1}\,|t|}\,\mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} = "UnabletofindIDF"$$

Survivor Function

$$S(x) = 1 - 2 \int_0^x \frac{(-1 + \operatorname{arccsch}(t))\, \mathrm{e}^{-(-1+\operatorname{arccsch}(t))^2}}{\sqrt{t^2+1}\,|t|}\, \mathrm{d}t$$

Hazard Function

$$h(x) = -2 \frac{(-1 + \operatorname{arccsch}(x))\, \mathrm{e}^{-(-1+\operatorname{arccsch}(x))^2}}{\sqrt{x^2+1}\,|x|} \left(-1 + 2 \int_0^x \frac{(-1 + \operatorname{arccsch}(t))\, \mathrm{e}^{-(-1+\operatorname{arccsch}(t))^2}}{\sqrt{t^2+1}\,|t|}\, \mathrm{d}t \right.$$

Mean

$$mu = 2 \int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{(-1 + \operatorname{arccsch}(x))\, \mathrm{e}^{-(-1+\operatorname{arccsch}(x))^2}}{\sqrt{x^2+1}}\, \mathrm{d}x$$

Variance

$$sigma^2 = 2 \int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{x\,(-1 + \operatorname{arccsch}(x))\, \mathrm{e}^{-(-1+\operatorname{arccsch}(x))^2}}{\sqrt{x^2+1}}\, \mathrm{d}x - 4 \left(\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{(-1 + \operatorname{arccsch}(x))\, \mathrm{e}^{-(-}}{\sqrt{x^2+1}} \right.$$

Moment Function

$$m(x) = \int_0^{2\left(\mathrm{e}-\mathrm{e}^{-1}\right)^{-1}} 2 \frac{x^r\,(-1 + \operatorname{arccsch}(x))\, \mathrm{e}^{-(-1+\operatorname{arccsch}(x))^2}}{\sqrt{x^2+1}\,|x|}\, \mathrm{d}x$$

Moment Generating Function

$$2 \int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{(-1 + \operatorname{arccsch}(x))\, \mathrm{e}^{-(\operatorname{arccsch}(x))^2+tx+2\operatorname{arccsch}(x)-1}}{\sqrt{x^2+1}x}\, \mathrm{d}x_1$$

$$t \mapsto \operatorname{arccsch}(t+1)$$

Probability Distribution Function

$$f(x) = -2 \frac{(\sinh(x) - 1)\cosh(x)}{(\sinh(x))^3} \mathrm{e}^{-\frac{(\sinh(x)-1)^2}{(\sinh(x))^2}}$$

Cumulative Distribution Function

$$F(x) = \mathrm{e}^{-\frac{\mathrm{e}^{4x} - 4\,\mathrm{e}^{3x} + 2\,\mathrm{e}^{2x} + 4\,\mathrm{e}^{x} + 1}{\mathrm{e}^{4x} - 2\,\mathrm{e}^{2x} + 1}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [ln \circ s \mapsto RootOf\left((1 + \ln(s))\_Z^4 - 4\_Z^3 + (-2\ln(s) + 2)\_Z^2 + 4\_Z + 1 + \ln(s)\right)]$$

Survivor Function

$$S(x) = 1 - \mathrm{e}^{-\frac{\mathrm{e}^{4x} - 4\,\mathrm{e}^{3x} + 2\,\mathrm{e}^{2x} + 4\,\mathrm{e}^{x} + 1}{\mathrm{e}^{4x} - 2\,\mathrm{e}^{2x} + 1}}$$

Hazard Function

$$h(x) = 2\,\frac{(\sinh(x) - 1)\cosh(x)}{(\sinh(x))^3}\mathrm{e}^{-\frac{(\sinh(x)-1)^2}{(\sinh(x))^2}}\left(-1 + \mathrm{e}^{-\frac{\mathrm{e}^{4x} - 4\,\mathrm{e}^{3x} + 2\,\mathrm{e}^{2x} + 4\,\mathrm{e}^{x} + 1}{\mathrm{e}^{4x} - 2\,\mathrm{e}^{2x} + 1}}\right)^{-1}$$

Mean

$$mu = -2\int_0^{\ln\left(1+\sqrt{2}\right)} \frac{(\sinh(x) - 1)\cosh(x)\,x}{(\sinh(x))^3}\mathrm{e}^{-\frac{(\cosh(x))^2 - 2\,\sinh(x)}{(\sinh(x))^2}}\,\mathrm{d}x$$

Variance

$$sigma^2 = -2\int_0^{\ln\left(1+\sqrt{2}\right)} \frac{(\sinh(x) - 1)\cosh(x)\,x^2}{(\sinh(x))^3}\mathrm{e}^{-\frac{(\cosh(x))^2 - 2\,\sinh(x)}{(\sinh(x))^2}}\,\mathrm{d}x - 4\left(\int_0^{\ln\left(1+\sqrt{2}\right)} \frac{(\sinh(x) -$$

Moment Function

$$m(x) = \int_0^{\ln\left(1+\sqrt{2}\right)} -2\,\frac{x^r\,(\sinh(x) - 1)\cosh(x)}{(\sinh(x))^3}\mathrm{e}^{-\frac{(\sinh(x)-1)^2}{(\sinh(x))^2}}\,\mathrm{d}x$$

Moment Generating Function

$$-2\int_0^{\ln\left(1+\sqrt{2}\right)} \frac{(\sinh(x) - 1)\cosh(x)}{(\sinh(x))^3}\mathrm{e}^{\frac{(\cosh(x))^2 tx - (\cosh(x))^2 - tx + 2\,\sinh(x)}{(\sinh(x))^2}}\,\mathrm{d}x_1$$

$$t \mapsto (\tanh(t + 1))^{-1}$$

Probability Distribution Function

$$f(x) = 2\,\frac{\mathrm{e}^{-\left(-1 + \operatorname{arctanh}\left(x^{-1}\right)\right)^2}\left(-1 + \operatorname{arctanh}\left(x^{-1}\right)\right)}{x^2 - 1}$$

Cumulative Distribution Function

$$F(x) = (x-1)^{1/2\,\ln(x+1)-1}\,(x+1)\,\mathrm{e}^{-1/4\,(\ln(x+1))^2-1/4\,(\ln(x-1))^2-1}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathit{RootOf}\left(-\left(\_Z+1\right)^{1/2\,\ln(\_Z-1)}\,\mathrm{e}^{-1/4\,(\ln(\_Z+1))^2-1/4\,(\ln(\_Z-1))^2-1}\_Z-\left(\_Z+1\right)^{1/2\,\ln(\_Z-1}\right.$$

Survivor Function

$$S(x) = -\frac{(x+1)^{1/2\,\ln(x-1)}\,\mathrm{e}^{-1/4\,(\ln(x+1))^2-1/4\,(\ln(x-1))^2-1}x+(x+1)^{1/2\,\ln(x-1)}\,\mathrm{e}^{-1/4\,(\ln(x+1))^2-1/4\,(\ln(x-}}{x-1}$$

Hazard Function

$$h(x) = -2\,\frac{\mathrm{e}^{-\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)^2}\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)}{\left((x-1)^{1/2\,\ln(x+1)}\,\mathrm{e}^{-1/4\,(\ln(x+1))^2-1/4\,(\ln(x-1))^2-1}x+(x-1)^{1/2\,\ln(x+1)}\,\mathrm{e}^{-1/4\,(\ln(x+1))^2-1/4\,(\ln}\right.$$

Mean

$$mu = 2\int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{x\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)\mathrm{e}^{-\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)^2}}{x^2-1}\,\mathrm{d}x$$

Variance

$$sigma^2 = 2\int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{x^2\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)\mathrm{e}^{-\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)^2}}{x^2-1}\,\mathrm{d}x - 4\left(\int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{x\left(-1+\operatorname{arctanh}\left(x\right.\right.\right.}{x}$$

Moment Function

$$m(x) = \int_1^{\frac{\mathrm{e}+\mathrm{e}^{-1}}{\mathrm{e}-\mathrm{e}^{-1}}} 2\,\frac{x^r\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)\mathrm{e}^{-\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)^2}}{x^2-1}\,\mathrm{d}x$$

Moment Generating Function

$$2\int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)\mathrm{e}^{-\left(\operatorname{arctanh}\left(x^{-1}\right)\right)^2+tx+2\operatorname{arctanh}\left(x^{-1}\right)-1}}{x^2-1}\,\mathrm{d}x_1$$

$$t \mapsto \left(\sinh\left(t+1\right)\right)^{-1}$$

Probability Distribution Function

$$f(x) = 2\,\frac{(-1+\operatorname{arcsinh}(x^{-1}))\,\mathrm{e}^{-\left(-1+\operatorname{arcsinh}\left(x^{-1}\right)\right)^2}}{\sqrt{x^2+1}\,|x|}$$

Cumulative Distribution Function

$$F(x) = x^{2\,\ln\left(\sqrt{x^2+1}+1\right)-2}\mathrm{e}^{-1-\left(\ln\left(\sqrt{x^2+1}+1\right)\right)^2-(\ln(x))^2}\left(x^2+2+2\sqrt{x^2+1}\right)$$

Inverse Cumulative Distribution Function

$$F^{-1} = []$$

Survivor Function

$$S(x) = -\frac{\left(\sqrt{x^2+1}+1\right)^{2\,\ln(x)}\,\mathrm{e}^{-1-\left(\ln\left(\sqrt{x^2+1}+1\right)\right)^2-(\ln(x))^2}x^2+2\sqrt{x^2+1}\left(\sqrt{x^2+1}+1\right)^{2\,\ln(x)}\,\mathrm{e}^{-1-\left(\mathrm{l}\right.}}{x^2}$$

Hazard Function

$$h(x) = -2\,\frac{(-1+\operatorname{arcsinh}(x^{-1}))\,\mathrm{e}^{-\left(-1+\mathrm{a}\right.}}{\sqrt{x^2+1}\,|x|\left(x^{2\,\ln\left(\sqrt{x^2+1}+1\right)+2}\mathrm{e}^{-1-\left(\ln\left(\sqrt{x^2+1}+1\right)\right)^2-(\ln(x))^2}+2\sqrt{x^2+1}x^{2\,\ln\left(\sqrt{x^2+1}+1\right)}\mathrm{e}^{-1-\left(\right.}\right.}$$

Mean

$$mu = 2\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}}\frac{(-1+\operatorname{arcsinh}(x^{-1}))\,\mathrm{e}^{-\left(-1+\operatorname{arcsinh}\left(x^{-1}\right)\right)^2}}{\sqrt{x^2+1}}\,\mathrm{d}x$$

Variance

$$sigma^2 = 2\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}}\frac{x\,(-1+\operatorname{arcsinh}(x^{-1}))\,\mathrm{e}^{-\left(-1+\operatorname{arcsinh}\left(x^{-1}\right)\right)^2}}{\sqrt{x^2+1}}\,\mathrm{d}x - 4\left(\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}}\frac{(-1+\operatorname{arcsinh}(x^{-1}))}{\sqrt{x}}\right.$$

Moment Function

$$m(x) = \int_0^{-2\left(-\mathrm{e}+\mathrm{e}^{-1}\right)^{-1}}2\,\frac{x^r\,(-1+\operatorname{arcsinh}(x^{-1}))\,\mathrm{e}^{-\left(-1+\operatorname{arcsinh}\left(x^{-1}\right)\right)^2}}{\sqrt{x^2+1}\,|x|}\,\mathrm{d}x$$

Moment Generating Function

$$2\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}}\frac{(-1+\operatorname{arcsinh}(x^{-1}))\,\mathrm{e}^{-\left(\operatorname{arcsinh}\left(x^{-1}\right)\right)^2+tx+2\operatorname{arcsinh}\left(x^{-1}\right)-1}}{\sqrt{x^2+1}x}\,\mathrm{d}x_1$$

$$t \mapsto \left(\operatorname{arcsinh}\left(t+1\right)\right)^{-1}$$

Probability Distribution Function

$$f(x) = 2\,\frac{\left(-1+\sinh\left(x^{-1}\right)\right)\mathrm{e}^{-\left(-1+\sinh\left(x^{-1}\right)\right)^{2}}\cosh\left(x^{-1}\right)}{x^{2}}$$

Cumulative Distribution Function

$$F(x) = \mathrm{e}^{-1/4\left(\mathrm{e}^{4\,x^{-1}}-4\,\mathrm{e}^{3\,x^{-1}}+2\,\mathrm{e}^{2\,x^{-1}}+4\,\mathrm{e}^{x^{-1}}+1\right)\mathrm{e}^{-2\,x^{-1}}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[s \mapsto \left(\ln\left(\mathit{RootOf}\left(1+\_Z^{4}-4\,\_Z^{3}+\left(4\,\ln\left(s\right)+2\right)\_Z^{2}+4\,\_Z\right)\right)\right)^{-1}\right]$$

Survivor Function

$$S(x) = 1-\mathrm{e}^{-1/4\left(\mathrm{e}^{4\,x^{-1}}-4\,\mathrm{e}^{3\,x^{-1}}+2\,\mathrm{e}^{2\,x^{-1}}+4\,\mathrm{e}^{x^{-1}}+1\right)\mathrm{e}^{-2\,x^{-1}}}$$

Hazard Function

$$h(x) = -2\,\frac{\left(-1+\sinh\left(x^{-1}\right)\right)\mathrm{e}^{-\left(-1+\sinh\left(x^{-1}\right)\right)^{2}}\cosh\left(x^{-1}\right)}{x^{2}}\left(-1+\mathrm{e}^{-1/4\left(\mathrm{e}^{4\,x^{-1}}-4\,\mathrm{e}^{3\,x^{-1}}+2\,\mathrm{e}^{2\,x^{-1}}+4\,\mathrm{e}^{x^{-1}}+\right.}\right.$$

Mean

$$mu = "Unable to find Mean"$$

$$Variance$$

sigma^2 = "$Unable to find Variance$"

Moment Function

$$m(x) = \int_{0}^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}} 2\,\frac{x^{r}\left(-1+\sinh\left(x^{-1}\right)\right)\mathrm{e}^{-\left(-1+\sinh\left(x^{-1}\right)\right)^{2}}\cosh\left(x^{-1}\right)}{x^{2}}\,\mathrm{d}x$$

Moment Generating Function

$$"unable to calculate MGF"$$

$$t \mapsto (\operatorname{csch}(t))^{-1} + 1$$

Probability Distribution Function

$$f(x) = 2\,\frac{\operatorname{arccsch}\left((x-1)^{-1}\right)\mathrm{e}^{-\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)^2}}{\sqrt{x^2-2\,x+2}}$$

Cumulative Distribution Function

$$F(x) = 2\int_1^x \frac{\operatorname{arccsch}\left((t-1)^{-1}\right)\mathrm{e}^{-\left(\operatorname{arccsch}\left((t-1)^{-1}\right)\right)^2}}{\sqrt{t^2-2\,t+2}}\,\mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} = "Unable to find IDF"$$

Survivor Function

$$S(x) = 1 - 2\int_1^x \frac{\operatorname{arccsch}\left((t-1)^{-1}\right)\mathrm{e}^{-\left(\operatorname{arccsch}\left((t-1)^{-1}\right)\right)^2}}{\sqrt{t^2-2\,t+2}}\,\mathrm{d}t$$

Hazard Function

$$h(x) = -2\,\frac{\operatorname{arccsch}\left((x-1)^{-1}\right)\mathrm{e}^{-\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)^2}}{\sqrt{x^2-2\,x+2}}\left(-1+2\int_1^x \frac{\operatorname{arccsch}\left((t-1)^{-1}\right)\mathrm{e}^{-\left(\operatorname{arccsch}\left((t-1\right.\right.\right.$$

Mean

$$mu = \int_1^\infty 2\,\frac{x\operatorname{arccsch}\left((x-1)^{-1}\right)\mathrm{e}^{-\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)^2}}{\sqrt{x^2-2\,x+2}}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_1^\infty 2\,\frac{\operatorname{arccsch}\left((x-1)^{-1}\right)x^2\mathrm{e}^{-\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)^2}}{\sqrt{x^2-2\,x+2}}\,\mathrm{d}x - \left(\int_1^\infty 2\,\frac{x\operatorname{arccsch}\left((x-1)^{-1}\right)\mathrm{e}^{-\left(\operatorname{arc}\right.}}{\sqrt{x^2-2\,x+2}}\right.$$

Moment Function

$$m(x) = \int_1^\infty 2\,\frac{x^r\operatorname{arccsch}\left((x-1)^{-1}\right)\mathrm{e}^{-\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)^2}}{\sqrt{x^2-2\,x+2}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_1^{\infty} 2\,\frac{\operatorname{arccsch}\left((x-1)^{-1}\right)\mathrm{e}^{tx-\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)^2}}{\sqrt{x^2-2\,x+2}}\,\mathrm{d}x_1$$

$$t \mapsto \tanh\left(t^{-1}\right)$$

Probability Distribution Function

$$f(x) = -2\,\frac{1}{\left(\operatorname{arctanh}\left(x\right)\right)^3\left(x^2-1\right)}\mathrm{e}^{-(\operatorname{arctanh}(x))^{-2}}$$

Cumulative Distribution Function

$$F(x) = \mathrm{e}^{-4\,(\ln(x+1)-\ln(1-x))^{-2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = ERROR(IDF) : Couldnotfindtheappropriateinverse$$

$$[s \mapsto 1\left(\mathrm{e}^{2\,\frac{1}{\sqrt{-\ln(s)}}}-1\right)\left(\mathrm{e}^{2\,\frac{1}{\sqrt{-\ln(s)}}}+1\right)^{-1}]$$

Survivor Function

$$S(x) = 1-\mathrm{e}^{-4\,(\ln(x+1)-\ln(1-x))^{-2}}$$

Hazard Function

$$h(x) = 2\,\frac{1}{\left(\operatorname{arctanh}\left(x\right)\right)^3\left(x^2-1\right)}\mathrm{e}^{-(\operatorname{arctanh}(x))^{-2}}\left(-1+\mathrm{e}^{-4\,(\ln(x+1)-\ln(1-x))^{-2}}\right)^{-1}$$

Mean

$$mu = -2\int_0^1 \frac{x}{\left(\operatorname{arctanh}\left(x\right)\right)^3\left(x^2-1\right)}\mathrm{e}^{-(\operatorname{arctanh}(x))^{-2}}\,\mathrm{d}x$$

Variance

$$sigma^2 = -2\int_0^1 \frac{x^2}{\left(\operatorname{arctanh}\left(x\right)\right)^3\left(x^2-1\right)}\mathrm{e}^{-(\operatorname{arctanh}(x))^{-2}}\,\mathrm{d}x - 4\left(\int_0^1 \frac{x}{\left(\operatorname{arctanh}\left(x\right)\right)^3\left(x^2-1\right)}\mathrm{e}^{-(\operatorname{arctan}$$

Moment Function

$$m(x) = \int_0^1 -2 \frac{x^r}{\left(\operatorname{arctanh}\left(x\right)\right)^3 \left(x^2-1\right)} \mathrm{e}^{-\left(\operatorname{arctanh}(x)\right)^{-2}} \, \mathrm{d}x$$

Moment Generating Function

$$-2 \int_0^1 \frac{1}{\left(\operatorname{arctanh}\left(x\right)\right)^3 \left(x^2-1\right)} \mathrm{e}^{\frac{tx\left(\operatorname{arctanh}(x)\right)^2-1}{\left(\operatorname{arctanh}(x)\right)^2}} \, \mathrm{d}x_1$$

$$t \mapsto \operatorname{csch}\left(t^{-1}\right)$$

Probability Distribution Function

$$f(x) = 2 \frac{1}{\sqrt{x^2+1} \left(\operatorname{arccsch}\left(x\right)\right)^3 |x|} \mathrm{e}^{-\left(\operatorname{arccsch}(x)\right)^{-2}}$$

Cumulative Distribution Function

$$F(x) = 2 \int_0^x \frac{1}{\sqrt{t^2+1} \left(\operatorname{arccsch}\left(t\right)\right)^3 |t|} \mathrm{e}^{-\left(\operatorname{arccsch}(t)\right)^{-2}} \, \mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} = "Unable to find IDF"$$

Survivor Function

$$S(x) = 1 - 2 \int_0^x \frac{1}{\sqrt{t^2+1} \left(\operatorname{arccsch}\left(t\right)\right)^3 |t|} \mathrm{e}^{-\left(\operatorname{arccsch}(t)\right)^{-2}} \, \mathrm{d}t$$

Hazard Function

$$h(x) = -2 \frac{1}{\sqrt{x^2+1} \left(\operatorname{arccsch}\left(x\right)\right)^3 |x|} \mathrm{e}^{-\left(\operatorname{arccsch}(x)\right)^{-2}} \left(-1 + 2 \int_0^x \frac{1}{\sqrt{t^2+1} \left(\operatorname{arccsch}\left(t\right)\right)^3 |t|} \mathrm{e}^{-(\operatorname{arccsch}}$$

Mean

$$mu = \int_0^\infty 2 \frac{1}{\sqrt{x^2+1} \left(\operatorname{arccsch}\left(x\right)\right)^3} \mathrm{e}^{-\left(\operatorname{arccsch}(x)\right)^{-2}} \, \mathrm{d}x$$

Variance

$$sigma^2 = \int_0^\infty 2 \frac{x}{\sqrt{x^2+1} \left(\operatorname{arccsch}\left(x\right)\right)^3} \mathrm{e}^{-\left(\operatorname{arccsch}(x)\right)^{-2}} \, \mathrm{d}x - \left(\int_0^\infty 2 \frac{1}{\sqrt{x^2+1} \left(\operatorname{arccsch}\left(x\right)\right)^3} \mathrm{e}^{-(\operatorname{arccsch}(}\right.$$

Moment Function

$$m(x) = \int_0^\infty 2\,\frac{x^r}{\sqrt{x^2+1}\,(\operatorname{arccsch}(x))^3\,|x|}\mathrm{e}^{-(\operatorname{arccsch}(x))^{-2}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 2\,\frac{1}{\sqrt{x^2+1}\,(\operatorname{arccsch}(x))^3\,x}\mathrm{e}^{\frac{tx(\operatorname{arccsch}(x))^2-1}{(\operatorname{arccsch}(x))^2}}\,\mathrm{d}x_1$$

$$t \mapsto \operatorname{arccsch}\left(t^{-1}\right)$$

Probability Distribution Function

$$f(x) = 2\,\mathrm{e}^{-(\sinh(x))^2}\cosh(x)\sinh(x)$$

Cumulative Distribution Function

$$F(x) = \left(\mathrm{e}^{1/4\left(\mathrm{e}^{4x}+1\right)\mathrm{e}^{-2x}} - \mathrm{e}^{1/2}\right)\mathrm{e}^{-1/4\left(\mathrm{e}^{4x}+1\right)\mathrm{e}^{-2x}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = ERROR(IDF) : Couldnotfindtheappropriateinverse$$

$$[s \mapsto -1/2\,\ln\left(-2\,\ln(-s+1)+1-2\,\sqrt{\ln(-s+1)\,(\ln(-s+1)-1)}\right)]$$

Survivor Function

$$S(x) = \mathrm{e}^{-1/4\,\mathrm{e}^{2x}+1/2-1/4\,\mathrm{e}^{-2x}}$$

Hazard Function

$$h(x) = 2\,\sinh(x)\,\mathrm{e}^{-(\cosh(x))^2+1/2+1/4\,\mathrm{e}^{2x}+1/4\,\mathrm{e}^{-2x}}\cosh(x)$$

Mean

$$mu = \int_0^\infty \mathrm{e}^{1/2-1/2\,\cosh(2x)}x\sinh(2x)\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_0^\infty \mathrm{e}^{1/2-1/2\,\cosh(2x)}x^2\sinh(2x)\,\mathrm{d}x - \left(\int_0^\infty \mathrm{e}^{1/2-1/2\,\cosh(2x)}x\sinh(2x)\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_0^\infty 2\, x^r \mathrm{e}^{-(\sinh(x))^2} \cosh(x) \sinh(x)\ \mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty \mathrm{e}^{tx+1/2-1/2\ \cosh(2\,x)} \sinh(2\,x)\ \mathrm{d}x_1$$