FORMULA 4.536.1

$$\int_0^\infty \frac{\tan^{-1}(qx)\sin^{-1}x}{x^2}\,dx = \frac{\pi}{2}\left(q\ln\left[\frac{1+\sqrt{1+q^2}}{\sqrt{1+q^2}}\right] + \ln(q+\sqrt{1+q^2}) - 1\right) - \tan^{-1}q$$