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Subject: Re: Inverse Hyberbolic Tangent

Posted by [Patrick L. Nolan](#) on Wed, 18 Dec 2002 18:29:20 GMT

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p.pall <p.pall@atm.ox.ac.uk> wrote:

> Does anyone out there know how to compute INVERSE hypebolic tangent in IDL  
> 5.5?

> An 'Atanh' function does not appear to exist.

> Does this mean I'll have to mess about with series expansions?

This one is easy to do on paper.

If  $y = \text{atan}(x)$ ,

then  $x = .5 * \ln( (1+y) / (1-y) )$

Of course you need to worry about singular behavior at  
the boundaries and the possibility of invalid y values.

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