Subject: Error propagation expressions
Posted by john.copley on Tue, 09 Oct 2001 21:25:38 GMT
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Does anyone know of, or has anyone written, an IDL procedure that takes an input string expression such as
"w4=w1+4*w2/(w3+con)"
and creates an output string expression that expresses the variance of the quantity on the left hand side?
In this case the output string expression would be something like
"v4=v1+16*((w3+con)^2*v2+w2^2*v3)/(w3+con)^4.
In these expressions wi, where i is an integer, e.g. w4, represents a quantity whose variance is vi, e.g. v4.
Other quantities, e.g. con in the above expressions, are treated as constants.
The assumption is that variances add, i.e. standard deviations add root mean square.
I am looking for a routine that can handle arbitrarily complicated combinations of (at least) addition, subtraction, multiplication and division.
I look forward to your thoughts!
John Copley