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Subject: Akima interpolation methods in IDL?

Posted by [Jasdeep Anand](#) on Fri, 31 Aug 2012 10:08:53 GMT

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I have a set of atmospheric profiles (that is, concentrations of trace gases that vary with altitude) that I'd like to interpolate onto a smaller, coarser grid. The concentrations vary quite rapidly with altitude, such that there are a number of very small and very large values present in the same dataset, and I would ideally like to use an interpolation method that would allow this variation to be maintained in some form. The data is only 1-D (that is, I have only one abscissa and one ordinate), so I don't think I can use functions like TRIGRID.

To date I've tried using SPLINE and INTERPOL to perform this interpolation, but due to how irregular my data is these produce wildly incorrect results. I've been told by colleagues that the Akima interpolation method (described in this paper: <http://student.ndhu.edu.tw/~u9111023/akima.pdf>) is best suited for situations like these, but I've been unable to find any libraries that perform this algorithm. Does such a library exist, or are there other interpolation methods available that would be more sensitive to local variations than SPLINE or INTERPOL? I'd be grateful for any advice on this matter.

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