Subject: Re: find missing elements in an array Posted by havok2063 on Mon, 07 Jan 2013 15:37:44 GMT

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On Thursday, December 27, 2012 1:37:48 PM UTC-5, Brian Cherinka wrote: > I have a peak-finding routine that finds, well...peaks, in a larger array. I know how many peaks there are suppose to be, and I know the way they should be arranged, e.g. > > > 1 set of 5 peaks, a gap, then a set of 10 peaks, a gap, then a set of 7 peaks etc.... > > > > > and I know how many sets of peaks there are as well. But sometimes these peaks could be missing and I'm trying to find a way to locate them based on nothing more than the input data, and the expected values. > > > so with the above example, I know there should be 22 peaks total in an array of data of say 30 elements, grouped in 3 sets of [5,10,7] peaks. I don't know where the peaks are apriori in the large array of 30 elements or where they should be. > > > > If I find 20 peaks, I know there are 2 missing but I would like to find out which peaks they are, in what sets, and where in the data array of 30 elements they are. Any ideas? > > > I have a current method in place involving using the separations between found peaks but it is bulky, and inconsistent. I am looking for alternative methods or help in making the method I do have implemented more efficient. Below I will describe my currently attempted method. > > > If all peaks were found then the separations (element+1 - element) should be something like > > > seps = [5,4,5,6,15,11,10,11,12,12,12,11,11,10,14,4,4,5,6,4,5,4] 22 elements > > > and I know there should be 2 gaps that separate the 3 bundles; the 15 and the 14 indicate gap locations. >

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expected (or lets say median) separations in the above example. So I basically loop over each
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basically looking for the gaps. If all the peaks are there I only find 2 gaps. In the above example
of 2 missing peaks, I find 4 gaps and can figure out that there are 2 missing peaks and where they
are and in which sets. I've had to refine it (and make it more complicated) where the separation
decreases from 1 set to the next, as in the above set 2 to set 3 transition. But it's still inconsistent.
It mostly works but if the separation values are different by 1 or 2, then my code isn't very robust.
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  test=[test,tmp[where(tmp lt ntot[0])]]
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   nt=n elements(test)
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becoming quite buggy and finicky and I've already added too many bandaids.

Subject: Re: find missing elements in an array Posted by Craig Markwardt on Mon, 07 Jan 2013 20:02:22 GMT View Forum Message <> Reply to Message

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Best wishes, Craig

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Subject: Re: find missing elements in an array Posted by havok2063 on Wed, 09 Jan 2013 20:56:47 GMT View Forum Message <> Reply to Message

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> Best wishes,
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> Craig
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Well I don't actually know beforehand where the peaks are supposed to be. I just know how many peaks there should be and how they are arranged (in so many groups of so many peaks with this expected spacing). My first step is to find the supposed peaks and their locations then I do this complicated business of looking for peaks missing if it doesn't find how many it's suppose to. I guess I could build a model based off the first pass of finding supposed peaks.