

From: Phil Jones <p.jones@uea.ac.uk>
To: "Folland, Chris" <ckfolland@meto.gov.uk>
Subject: RE: VARIANCE PROBLEM
Date: Thu, 10 Jun 1999 15:48:05 +0100
Cc: d.parker@meto.gov.uk,t.osborn@uea.ac.uk

Chris,

Sorry to be flooding you with another email, but I was discussing this with Tim. Tim reminded me of a paper that he'd written in that well known journal Dendrocronologia ! I've sent down a copy of the proofs to you both. The paper has been in press for the last 2 years ! This must be the slowest journal in the world. This has some more theory in it and some variance corrections for tree-ring and temperature series.

We are going ahead with the method I've outlined over the last few emails. Tim and I have modified a couple of things slightly :

1) Using the present combined dataset (Jones, 1994 and Parker et al. 1995) we will calculate monthly rbars for each 5 by 5 box. The grid-box time series will be filtered with a 30-year Gaussian filter. rbar will be calculated from the residual grid-box time series. Tim reckons that a longer filter is better (an analysis in the paper). He suggests 40 years, but this involves more problems with the ends, so we'll go with 30. I don't think 20,30,40 will make that much difference to the rbar values.

We are using the combined dataste for the estimation as this should produce better rbar values around coasts and islands. If we used the land only dataset we would have real problems with isolated islands and with some coasts (where all neighbouring boxes will be in one direction from the coastal box).

2) Having got fields of the monthly rbars we'll then apply the formula to the land-only dataset. As you're doing something similar with the marine dataset, we can remerge the two variance corrected datasets using David's merging (growing land and neighbour checking) program.

3) We will then write this up as a small paper for GRL, about the land only results. Both of you can be on this if you want. We can decide later what to do about the merged dataset.

4) applying the correction in real time in the future will mean that we will always be slightly changing approximately the last 15 years data - because of the filter end effects. Best would seem to be to maintain the present version we have and apply this variance correction every few years (eg the IPCC cycle !).

Cheers
Phil

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