KFcorr10 (version 1.0)

(1) This code is a minor modification to Oscar Lovera's original code (obtainable from his UCLA web site; the literature reference is Lovera et al. (2002). The main change was just a simplification and change to data input. Blame me (Zeitler) for any issues you have, NOT Oscar.

(2) Compiled using gfortran under OS X (KFcorr10 is a command-line tool you need to use with Terminal.app). You'll need at least a little UNIX experience.

(3) Be sure your input files have UNIX-style line terminations (linefeed): Macs use carriage-return and Windows uses carriage-return-linefeed. You need to use a text editor that can switch between formats. Do NOT use a word processor!!

How to use KFcorr

Basic instructions, assuming just a little UNIX knowledge, but not none.

(1) Create the required input files. Each must have the correct file name and of course, correct format. Working samples were included with this distribution. The files are:

(a) samples.lst
The first line contains the name of the sample (not important, but it helps identify your output). The second line is a pair of numbers that give the start and end fractional losses for the segments that you wish to correlate. Obviously these need to be between 0 and 1.

(b) corrlog.in
A two-column table with the first value in each row being the fractional loss value, and the second the value of logR/Ro. **NOTE**: The fractional loss value is that for the MIDPOINT of the step, not its end as is usually the spectrum convention.

(c) corrspec.in
Same as the previous file, but the second value is age. **NOTE**: The fractional loss value is that for the MIDPOINT of the step, not its end as is usually the spectrum convention.

The distribution included an Excel spreadsheet that allows you to paste in age-spectrum from ArArCalc and obtain the required smoothed spectrum. You can use this for your R/Ro data as well if required. **Remember**, use UNIX line terminations in your final text files!

(2) Organize a working directory. Create a unique directory (say, named after your sample), and place your input files and the KFcorr tool into it (be sure KFcorr has permissions that allow execution). Creating a unique directory helps you save the

inputs as a record; if you don't care, then you can just have a single working directory for KFcorr and keep overwriting the input files.

(3) Run the tool. Type ./KFcorr10 -- the program should run almost instantly. If not, you have a problem (terminate if with control-C). If there are errors, they're most likely due to a bad input file (bad name, wrong line termination, weird value or values).

(4) Examine the output. If the program runs correctly, you should see a new file: FILENAME_cross.dat. This file will have the sample's cross-correlation and the fractional-loss range to which the correlation applies.

(5 Think. Do have a look at your final correlation value and see if it makes sense compared to other samples you have run, or the examples reported by Lovera et al. (2002). Don't just blindly use this value - you could have made a no-fatal input error, after all.