Non-linearity comment

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"the method presented below can generally extract nonlinear trends by itself"

Another way to detect nonlinearity is to map a linear response forcing $kF(t)$ into a generalized non-linear response $g(F(t))$. A straightforward way to do this is to apply a Fourier transform to the mapping $F(t) \rightarrow g(F(t))$. If one makes a educated guess as to the forcing, such as by a semi-annual triggered modulation of tidal forces, then the non-linear transfer function can be extracted. It turns out that this non-linearity is also found as a solution to Laplace's Tidal Equations along the equator, which are applied to describe the fluid dynamics of the ENSO thermocline. Consider citing the reference Pukite, Coyne, Challou, "Mathematical Geoenergy" (Wiley/AGU,2018), Chapter 12.

A commentary to a recent paper submitted to EGUsphere "The modelled climatic response to the 18.6-year lunar nodal cycle and its role in decadal temperature trends" (https://egusphere.copernicus.org/preprints/2022/egusphere-2022-151/) can be used as a guide to how the non-linear model is applied. See https://editor.copernicus.org/index.php?_mdl=msover_md&_jrl=778&_lcm=oc108lc109w&_acm=get_comm_sup_file&_ms=102400&c=224494&salt=6355259321777718430