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Farzad Sabzikar* (sabzikar@iastate.edu), 2218 Snedecor Hall, AMES, IA 50011, and **Mark Meerschaert** and **Ian McLeod**. *Semi-long range dependence*.

A popular model of long range dependence involves a correlation function that falls off like a power law. This class includes fractional Brownian motion, fractional Gaussian noise, and fractional ARIMA time series. We present a novel modification of these models that involves tempering the power law correlation function with an exponential. This results in a tempered fractional Brownian motion, tempered fractional Gaussian noise, and tempered fractional ARIMA time series. Several applications will be presented to illustrate the mathematical advantages, statistical advantages, and practical utility of the new model. (Received August 15, 2018)