Despite the nearly universal imperative to continuously improve processes, Shewhart-stable time series are often ignored for improvement because of various generalized assumptions and "rules", many of which are actually very context dependent. The process control literature presents widely divergent views, including the extreme position that stable processes are completely random and therefore any further compensation ("tampering") can only increase process variability. The traditional reductionist approach to process improvement characterizes underlying factors using statistical variance measures, which has been very effective for unstable processes. However, this approach, especially when it involves Shewhart control charts, is generally much less effective for directing the improvement of stable time series, often resulting in a transition to passive monitoring to await a special cause of variation. A model-free strategy founded upon information theoretic quantifiers was researched to instead develop an emergence-based perspective. Jensen-Shannon complexity was mapped temporally with permutation entropy to reveal structural patterns of order that could direct further process improvement, challenging the notion of tampering. Stable processes disclosed informative nonrandom structure corresponding with relative degrees of randomness, also challenging the notion of a constant system of "chance causes." In the future, similar emergence-based methods could provide a useful supplement to reductionist methods during the improvement of virtually all types of processes.

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The public is welcome to attend.