TADPOLE™

Online Oscillation Detection Software for Chemical Plants and Refineries

Oscillations in Chemical Plants

Modern chemical plants are very heat integrated. Modern Advanced Control pushes plant capacity. Plants can run from Max rates to Low rates. Change in Product Grades, Feedstock, Ambient temp, and change in operating conditions cause Nonlinearity. Incorrect PID Controller Tuning can be a problem. All these & other reasons, can cause process variables to oscillate.

Oscillations impede rate maximization and tight quality control, and as a result, reduce plant profit.

Tadpole™ helps to:

- **Increase Plant Reliability**
- **Increase Production Rates**
- **Push Plant Variables closer to Operating Constraints**
- **Adaptively adjust tuning or provide advisory/automatic action**
- **Improve Plant's Profit Margin**

Oscillation Alarm for Adaptive Control

Current DCS High and Low alarms do not always trap oscillations. With Tadpole, oscillation alarm and alert triggers auto adaptive control action that automatically stabilizes the loops involved and prevents any lost production or harmful effects.

Revolutionary True Amplitude Detection (TAD) Algorithm invented by PiControl

The TAD algorithm is the most modern and most advanced algorithm for reliably detecting oscillations. It is easily configured to trap oscillations only when they are large enough to cause problems. You can customize each loop based on the process characteristics. TAD never gets fooled by any level of noise, drift and complexity.
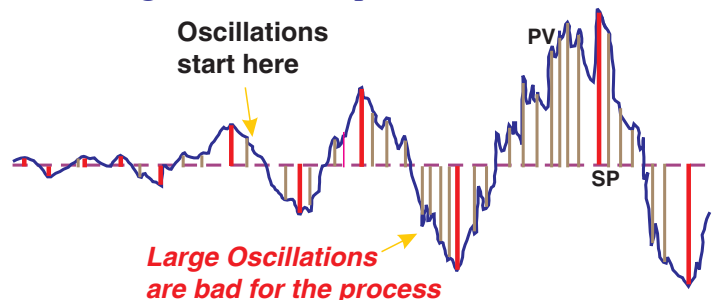
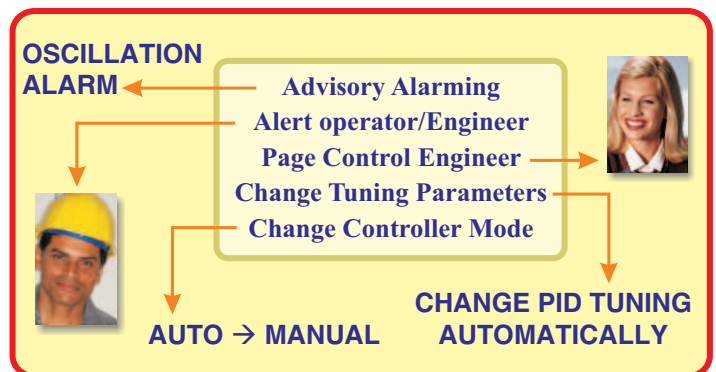## Growing Amplitudes Constitute INSTABILITY
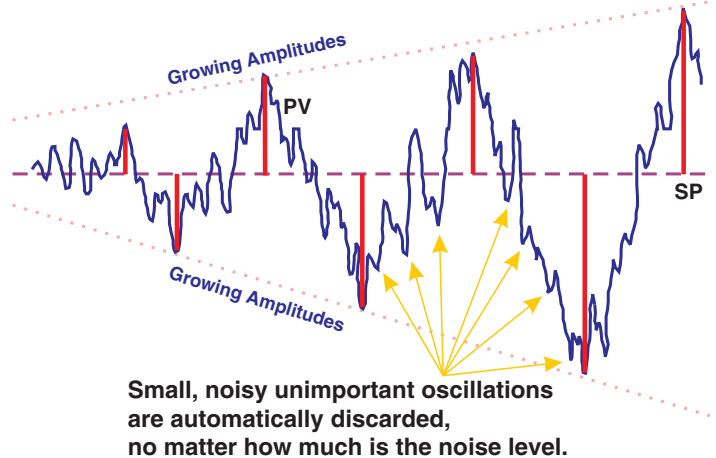
Small, noisy unimportant oscillations are automatically discarded, no matter how much is the noise level.

This Process is fully automatic with human intelligence

Irrespective of noise level, Tadpole automatically Identifies the RED TRUE AMPLITUDES while discarding the brown amplitude

Large Oscillations are bad for the process

OSCILLATION ALARM

Advisory Alarming
Alert operator/Engineer
Page Control Engineer
Change Tuning Parameters
Change Controller Mode

AUTO → MANUAL

CHANGE PID TUNING AUTOMATICALLY

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