



TRANSDUCER

FEATURE EVENT:



Section Meeting –
Wednesday, March 19, 2003
⇒ All invited, including non-members! ⇐



Beyond Single Loop PID Control: Model-Based and Combined Feedforward-Feedback Control

Several knowledgeable process control professionals claim that conventional PID control can meet the requirements for 90-95% of all industrial control loops. But what about the remaining more challenging control loops? When the process control loop has long dead time, one or more significant process lags, and higher order process dynamics, then advanced control techniques such as model-based control and combined feedforward-feedback control can provide tighter control. This presentation will discuss the theory behind these two advanced control techniques, and how these techniques can be applied to achieve improved process control performance. A long deadtime loop with multiple process lags and higher order process dynamics will be shown, along with a simulated performance comparison of conventional single loop PID control vs. model-based control. A combined feedforward-feedback control application that the author designed and implemented, significantly improving composition control of a binary distillation column will be demonstrated. A combined feedforward-feedback control loop tuning methodology will also be discussed



Speaker:

David Leach, Owner – Industrial Process Automation <http://www.ind-pro-opto.com/>

David Leach is an independent consultant, specializing in advanced process control and control-related information technology. He has a B. S. in Chemical Engineering. He was formerly employed as an Engineering Associate – Computer Control Applications for Air Products and Chemicals, Inc., in Allentown, PA. He has authored worldwide control system standards; evaluated and applied new process control and control systems information technologies; designed and commissioned process control and control-related information systems; and performed applications consulting in the areas of advanced process control, plant information management, process dynamics analysis, dynamic simulation, and process optimization. He also has trained process and control engineers in controller fundamentals and tuning; and in the design, use and management of DCS Human Machine Interface (HMI) systems.

DATE & TIME: Wednesday March 19, 2003; social at 6 PM; presentation at 7 PM .
Food & drinks will be provided during social time prior to the presentation.

LOCATION: Siemens Offices (look for large sign on outside of building),
1015 Virginia Drive, Fort Washington, PA (West of Honeywell)

DIRECTIONS: PA Turnpike Exit 26 (Fort Washington at Route 309), follow signs over several streets toward Expo Center, also on Virginia Drive; From Trnpk/309, will be on right prior to Expo Center/Honeywell; from Susquehanna Rd/Limekiln Pike, will be on left after them. **Easy pass exit** at Virginia drive now in operation! [Westbound only]

Also: Get map from our website

COST: A modest \$10.00 for a commonsense light meal, but plenty for "seconds."
If eating, please register by Monday, March 16, by calling Lynn Swan at Advanced Controls: Phone: (215) 674-4777
E-mail: <mailto:ace1afp1@aol.com>

NOTE: Also see Philadelphia Section Website: <http://www.isa.org/~phila/phillyisa/index.htm>
To remember how to find us at any time: Just merely go to [www.isa.org], select [sections], then [Philadelphia]
ALSO: Type "philadelphia isa" into any major search engine, such as GOOGLE and we are the first or second entry that appears!

⇒ Copy this notice for posting at your company; pass it on to anyone else you feel is interested! ⇐