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To the Editor:

Advanced control systems are still based round PID concepts!

I have just completed a survey of a selection of the available distributed computer process control schemes such as Honeywell TDC2000, Foxboro Microspec, Siemens Teleperm and Kent P3000.

Clearly, these and similar systems are set to revolutionise the process control scene since they offer the advantages:

Systems can be built by merely "configuring" rather than by programming so that the need for specialist software effort is reduced virtually to zero. The distributed format is transparently obvious in its operation. Reliability and flexibility are inherent features of the distributed approach. Compact colour-screen displays give ergonomically ideal operation interaction and plant overview.

If the early parallel analogue schemes are regarded as phase 1 and centralized digital process computer schemes as phase 2, then micro-based distributed systems form a fairly clearly delineated phase 3 in the historical development of process control approaches.

Let us now turn our attention to the algorithms on offer in phase 3 systems. Each system on offer has been the subject of extensive market research and considerable development so we can assume that the algorithms provided are roughly the best available, as defined by the purchaser.

The main point I want to bring out is that in these computationally revolutionary phase 3 systems, the control algorithms are still based on PID, just as in phase 1 systems of the 1950's.

What happened to all the advanced DDC algorithms, such as finite time settling controllers and self-tuning regulators that have held the stage at so many control conferences? Are these algorithms after all inferior to PID, despite all the development by so many eminent workers? Have the manufacturers, such as Honeywell, Foxboro, Siemens, simply failed to evaluate the newer algorithms due to market conservatism?

Is it true that the PID algorithm, suitably discretised, and perhaps connected in cascade, is the ultimate controller for most process loops? Could we have views from control theorists, system manufacturers and process industries?

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