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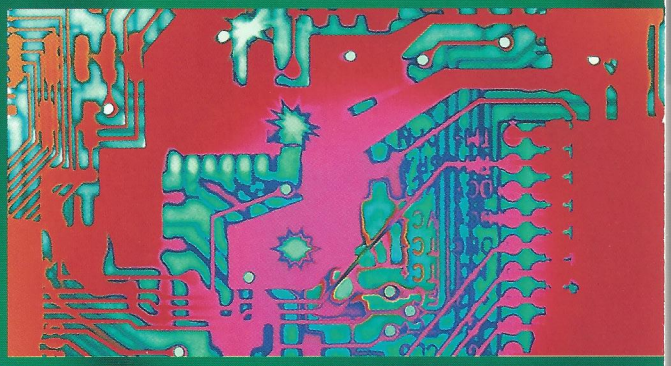

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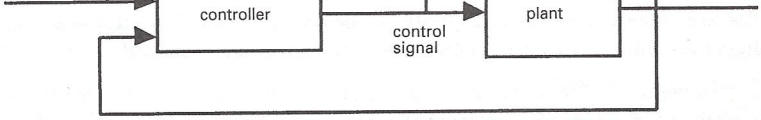

Adaptive control system

adaptive control system A ➤control system in which the controller has adjustable ➤parameters and a mechanism for adjusting the parameters. The controller becomes nonlinear because of the parameter adjustment mechanism. An adaptive control system can be modelled as a system having two loops (see diagram). One loop is a normal ➤feedback with the process and the controller. The other loop is the parameter adjustment loop, which is often slower than the normal feedback loop.

adaptive equalizer ➤equalization.

ADC *Abbrev. for* analogue-to-digital converter.

ADCCP *Abbrev. for* advance data communication control procedure. In communications, a type of ➤protocol developed by the American National Standards Institute. It works at the bit level within a message: particular bits in the message are used to indicate which bits are the message, which bits are the sender and recipient identifiers, and which bits are concerned with error handling.

Adcock direction finder *Syn.* Adcock antenna. A radio direction finder consisting of a number of spaced vertical ➤antennas. The errors due to the horizontally polarized components of the received waves are effectively eliminated as such components have only a minimal effect on the observed bearings.

adder A circuit in a ➤computer that performs mathematical addition. A *full adder* contains several identical sections each of which add the corresponding ➤bits of the two

address bus A special-purpose computer ➤bus that carries only ➤address information. The size of the address bus will specify the memory space that is addressable: n address lines will allow 2^n memory locations to be individually identified.

addressing mode The way in which the ➤address of a particular ➤memory location is produced in a computer system. These can include ➤direct addressing, ➤indirect addressing, ➤relative addressing, and ➤indexed addressing modes. Addressing modes are specified for individual processors; the specification is part of the computer architect's task.

admittance Symbol: Y; unit: siemens. The reciprocal of ➤impedance. It is a complex quantity given by

$$Y = G + jB$$

where G is the ➤conductance, B the ➤susceptance, and $j = \sqrt{-1}$. Since impedance, Z, is given by

$$Z = R + jX,$$

where R and X are the resistance and reactance, respectively, then

$$Y = 1/Z = 1/(R + jX)$$

$$= (R - jX)/(R^2 + X^2)$$

admittance gap A gap in the wall of a ➤cavity resonator that allows it to be excited by a source of radiofrequency energy, such as a velocity-modulated electron beam, or that allows it to affect such a source.

ADSR *Abbrev. for* attack decay sustain release.

aerial ➤antenna.

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