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(54) **SELF-ORGANIZING CONTROL SYSTEM**

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(57) **ABSTRACT**

A self-organizing control system suitable for nonlinear control of a physical object is described. The control system calculates the entropy production difference between a time differentiation (dS_u/dt) of the entropy inside the controlled object and a time differentiation (dS_c/dt) of the entropy given to the controlled object from a PID controller that controls the object. The entropy production difference is used to generate an evolving control rule by using the entropy production difference as a performance function for a genetic optimizer.

16 Claims, 10 Drawing Sheets