On Tropistic Processing and Its Applications

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Abstract:

The interaction of a set of tropisms is sufficient in many cases to explain the seemingly complex behavioral responses exhibited

by varied classes of biological systems to combinations of stimuli. It can be shown that a straightforward generalization of the

tropism phenomenon allows the efficient implementation of effective algorithms which appear to respond "intelligently" to changing environmental conditions. Examples of

the utilization of tropistic processing techniques will be presented in this paper in applications entailing simulated behavior synthesis, path-planning, pattern

analysis (clustering), and engineering design optimization.