

Entropy Generation in Engineered and Natural Systems

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Abstract

The lecture proposes to use the entropy generation rate as a “Lagrangian” that defines the local and global structure of natural and engineered systems.

Examples are given to show how some configurations identified in fluid flow can be obtained by minimizing, under an appropriate set of constraints, the “optimal” configuration. In engineered systems, such “optima” are desirable design goals; in natural systems, it is claimed that they emerge from the natural competition for resources (optimal use of the incoming exergy resources)