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# The Chromosome as a topological device for conversion of energy into information

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## Abstract

Understanding of chromosomal behavior requires a deep insight into the genuine function of the DNA molecule as information carrier. Compelling evidence suggests that the DNA, in addition to the digital information of the linear genetic code (the semantics), encodes equally important continuous, or analog, information that specifies the structural dynamics and configuration (the syntax) of the polymer. These two DNA information types are intrinsically coupled in the primary sequence organisation, and this coupling is directly relevant to organisation of the genetic function. There is a critical need of holistic integration of the systemic, structural and functional aspects of DNA information as a prerequisite for understanding the organisational complexity of genetic regulation and chromosomal behavior.

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