



STATISTICAL PHYSICS OF COMPLEX SYSTEMS



INTRODUCTION

The research group Statistical Physics of Complex Systems of the Department of Applied Physics II, located at E.T.S.I. Informatica (Higher Technical School of Engineering, Dep. Informatics), is specialized in the use of statistical physics for the analysis of sequences in the DNA chain. Principle research objective is to ascertain, whether there is hidden information in the DNA and to decipher it. Furthermore, the interdisciplinary group, formed of 5 researchers from various academic fields, like physics, mathematics and informatics, studies distinct physical processes that are based on the behaviour of disordered conductors. Because of the fundamental nature of the studies possible applications range from medicine, biotechnology, engineering, physics to even intelligent searches in a text. In the last-mentioned line of investigation, the scientists develop a computer program that is able to extract keywords from books.

RESEARCH TOPICS

- Bioinformatics.
- Statistical physics.
- Numeric simulation of complex systems.
- Analysis of time series.
- Analysis of physiological signals.
- Computational linguistics.

SCIENTIFIC-TECHNICAL SERVICES

- Numeric simulation and calculation: Physical systems. Mechanical systems. Physiological signals (cerebral and cardiac).
- Analysis of time series.

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