

The Giorgio Careri Memorial Lectures Series



SAPIENZA
UNIVERSITÀ DI ROMA

Dipartimento di
Fisica

The Physics Department of Sapienza University of Rome established, in 2010, a series of invited lectures named after Giorgio Careri (1922-2008). Professor of structure of matter for more than 30 years Careri gave a strong impulse to low-temperature physics and to biophysics. A brilliant independent mind he has been versed, until his very last days, in several subjects at the crossroad where physics, biology and the arts meet. The Giorgio Careri Memorial lecture is given, each year, by distinguished scholars active in the fields of interests cultivated by Careri, invited to present either comprehensive or sharply focused views on subjects of their own choice.

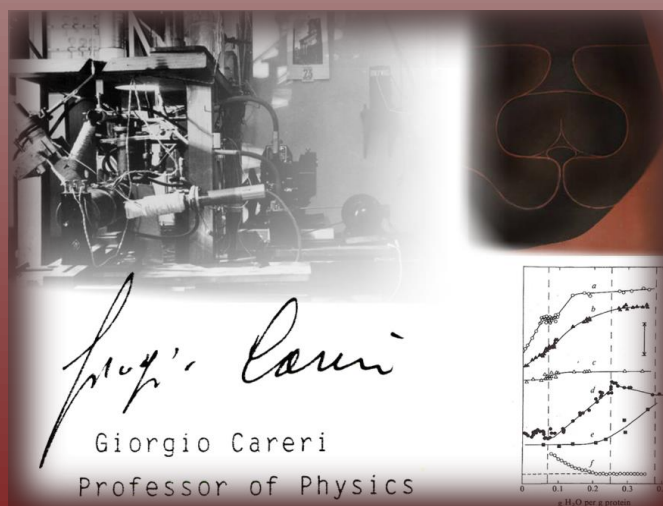
The tenth Careri Lecture will be given by
Prof. EDDA KLIPP
Humboldt-Universität Berlin



ENTROPIC REGULATION OF DYNAMICAL METABOLIC PROCESSES

Life depends on the input of energy, either directly provided by sunlight or in form of high-energy matter. The rules and conditions for the conversion of chemical or electromagnetic energy into living structure and all the processes related with life are governed by the laws of thermodynamics. Here, we review basic principles of thermodynamics for equilibrium and non-equilibrium processes as well as for closed and open systems as far as they concern processes of life and development. We demonstrate that steady states of metabolic systems cannot show energy dissipation, while in dynamical modes entropy of the system can both increase or decrease, depending on the type of perturbation. These findings are very important for biotechnological processes where energy dissipation should be limited.

Aula Conversi, October 22, 2019 4:00 pm



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Abstract <https://agenda.infn.it/event/19479/>