

物理教室 物性コロキウム

日時：3月11日(金) 15:00 - 16:30

場所：理学部 総合研究棟 743号室(大学院講義室)

講師：Antoine Naert (Ecole Normale Supérieure de Lyon)

題目：“Violation” of the Fluctuation-Dissipation Theorem?
An experiment on polymer glasses

要旨： Glassy materials are more and more present in our everyday life. Because they are cheap and easy to handle, they have diverse mechanical or electrical properties, we tend to put more and more of such materials in cars and planes, instead of metals. So studies first came from the field of material science. Some animals also happen to use properties of glass to survive in extreme conditions, such as insects in deserts, or frogs (or snakes or turtles) that freeze during the winter of cold countries... To improve properties of glasses, physicists started to build toy-models for “spin-glasses”, and realised that the dynamics of glass is far from being trivial. Glass is a system which actually never reaches thermal equilibrium. As very little is known on non-equilibrium thermodynamics, those “everyday materials” are nowadays interesting for physicists because of their puzzling behaviour. Since now a few years, S. Ciliberto started (experimental) activities on different aspects of the dynamics of amorphous systems. In this talk, I want to present the group of people that gathered around S. Ciliberto in the recent years. I will present different experiments that are running or in project in Lyon at the moment. I will give a quick outline of the FDT derivation, in the equilibrium case (Fluctuation-Dissipation Theorem) just to try to make a list of the hypothesis. Then, I will present in more details the experiment I'm working on with L. Bellon: dielectric properties of a polymer glass. After thermal quench, L. Buisson observed spikes on the time series. Is this intermittency related to the so-called violation of the FDT?

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14:45 よりコーヒー、紅茶、お菓子を用意します。

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