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Confined fluids properties by quasi-elastic neutron scattering with Bernhard Frick

Thursday, 13 October 2022 11:00 (30 minutes)

In the mid 90's, Neutron Scattering contributed greatly to a better understanding of the phenomena related to viscous slowing down and Glass Transition in many different systems, polymers, molecular liquids, spin glasses, proteins. Quasi-elastic scattering has been instrumental in providing a description of the various relaxation processes involved and in testing theoretical approaches. The heterogeneous character of the structural relaxation was then associated with a possible dynamic correlation length increasing when approaching the glass transition; the interest of imposing a length via a nanoscopic confinement appeared then particularly relevant. The phase transitions of confined systems were already widely studied by many methods but the whole was far from converging both experimentally and by numerical simulations. Then Bernhard Frick, Reiner Zorn and Herma Buttner proposed to organize the first International Workshop on Dynamics in Confinement in January 2000. At that time, I was lucky enough to discover quasielastic neutron scattering, (in particular backscattering) with my friend and fantastic colleague Bernhard. He introduced me to the methods and we worked together on several approaches starting with liquids under high pressure to properties deep into the glassy state. Bernhard introduced several students and colleagues to neutron scattering and to what constitutes the work of an experimentalist, thus contributing to the training of a new generation of scientists. Their work will be presented focusing on the impact of confinement on the behavior of fluids compared to standard conditions.

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