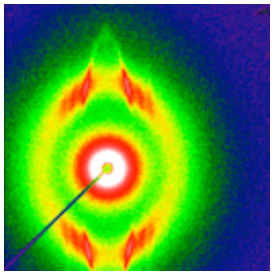

Contribution ID: **61** Type: **not specified**

Contr. Talk 5 - The effects of high-power ultrasound on colloidal gels

Monday 10 December 2018 18:00 (20 minutes)

Low-intensity ultrasound is widely used to probe and image biological tissues.Yet, yltrasound can also be used at high power to destroy nodules or burn tumors. We try to transpose and understand the latter effects in soft matter. We first show that high-power ultrasound softens colloidal gels. Upon applying ultrasound at 45kHz for a few tens of seconds on various gels in a rheometer, we find that the elastic modulus of the gel is weakened and that its fluidization is fastened. As ultrasound is turned off, the gel recovers its elasticity. To investigate this process at the micron scale, we then probe the gel under ultrasound with small-angle X-ray scattering (ESRF, ID02). These experiments show a strong effect of the ultrasound excitation on the SAXS spectra both on a colloidal gel at rest and under flow.

Presenter: DAGÈS, Noémie

Session Classification: Later afternoon session - Colloids