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## Elasticity and plasticity : foams near jamming

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### Citation

Siemens, A. O. N. (2013, September 12). *Elasticity and plasticity : foams near jamming*. *Casimir PhD Series*. Retrieved from <https://hdl.handle.net/1887/21709>

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**Title:** Elasticity and plasticity : foams near jamming

**Issue Date:** 2013-09-12

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# Stellingen

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## Behorend bij het proefschrift

1. The discontinuity in the bulk modulus of wet foams at the jamming point previously seen in simulations can indeed be observed in an experimental foam system. This Thesis Chapter 4.
2. The foam area's response to deformation in a wedge geometry is the best way to distinguish between the boundary jammed and the gravity jammed regime. This Thesis Chapter 4.
3. For wet foams, in a wide range around jamming, rearrangements are spatially extended, very different from the T1 rearrangements seen in dry foams. This Thesis Chapter 5.
4. In the gravity jammed regime, the foam area remains constant under deformation, indicating that the shear modulus goes to zero at the critical point. This Thesis Chapter 4.
5. The formation of mountains/hills on sheared rice grains is due to local disorder, which leads to large dilation. Wortel, G. *in preparation*.
6. The first and second peak of the pair correlation function, a structural signature of the jamming transition, can be observed in 2D packings of tapioca pearls. Cheng, X., *Phys. Rev. E* **81**, 031301 (2010).

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7. By solely knowing the number of contacts per droplet, the total number of emulsion droplets in a container can be determined without knowing all their positions. Clusel, M., Corwin, E.I., Siemens, A.O.N., Bruijic, J., *Nature* **460**, 7255 (2009).
  8. Rolling elastic ribbons in a rotating drum take a similar shape to a water droplet rolling down an inclined plane. Raux, P.S., Reis, P.M., Bush, J.W.M., Clanet, C., *Phys. Rev. Lett.* **105**, 044301 (2010).
  9. The rendering of figures for a PhD thesis takes longer than the actual writing itself.
  10. Besides the popular interest of walking on cornstarch and shear-thickening fluids, they are still not capable of stopping a bullet or a knife stab if made into a protective vest.
  11. The Dutch like to believe there is a bitter rivalry when playing the Germans in football, which the Germans hardly acknowledge.