

## Electronic Supplementary Information to: Dynamic Mechanical Analysis of Suspended Soft Bodies via Hydraulic Force Spectroscopy

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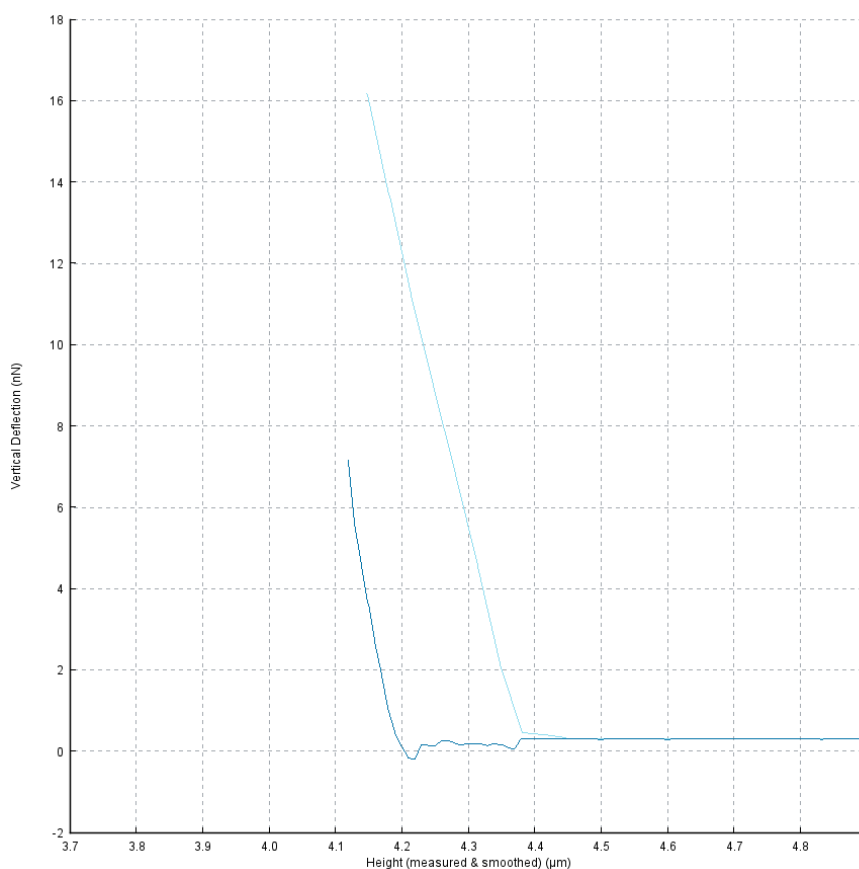


Figure 1 - Example of an experimental AFM curve (spherical probe, 20 µm diameter). The plot shows approach (light blue) and retraction (dark blue) segments, as obtained with the JPK Data Processing software. Stress relaxation and oscillatory rheology segments are not shown. As it is possible to see for the retraction curve, adhesion between sample and AFM tip is very small. In this particular example, the detachment occurs at -450 pN, i.e. approximately 3.1% of the peak load.

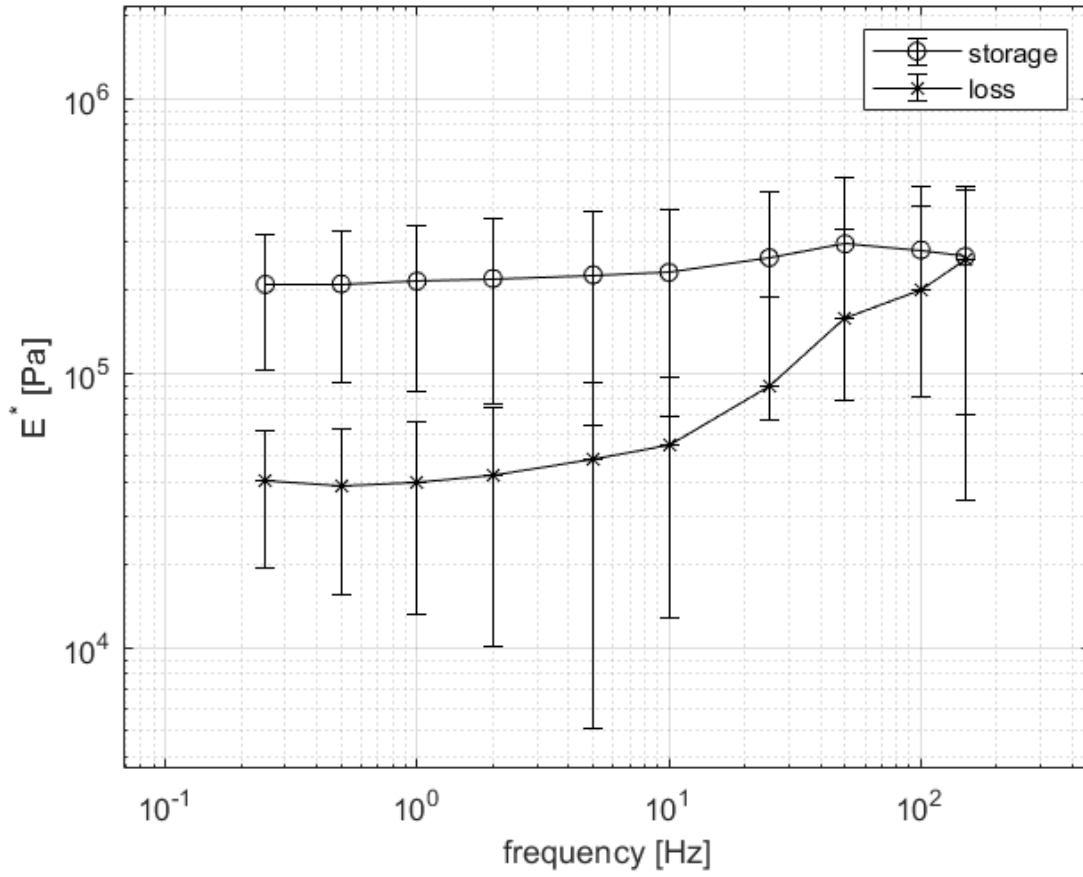


Figure 2 -  $E^*$  obtained via AFM dynamic nanoindentation, using the 3.5  $\mu\text{m}$  diameter tip. The trend of storage and loss moduli is analogous to that observed for HFS and for AFM (20  $\mu\text{m}$  tip). Both curves are shifted towards higher values, but the viscous losses are now in line with what HFS estimates. Results are mean  $\pm$  SD (N=30).