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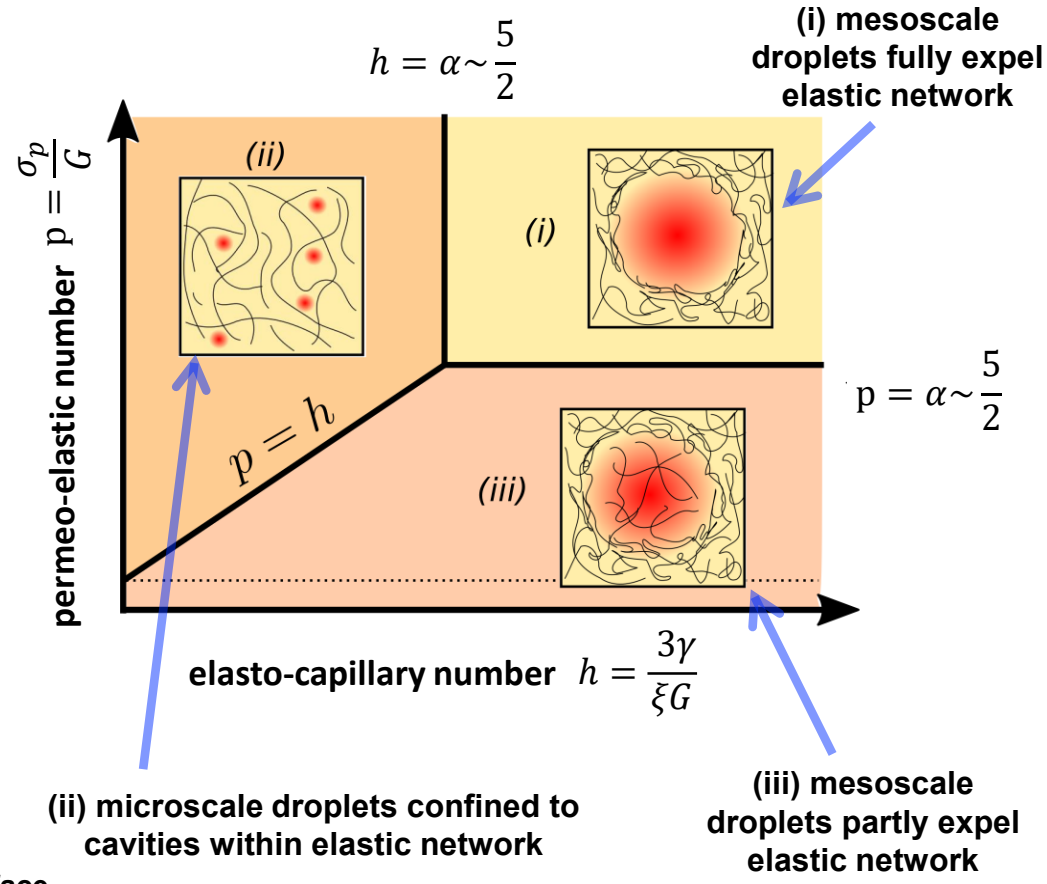
Liquid-liquid phase separation (LLPS) within elastic networks

We have shown that, in systems undergoing LLPS, interplay between capillary forces and mechanical deformation within matrix phase leads to three distinct possibilities for equilibrium droplet sizes and elastic network deformation.

P. Ronceray[1], S. Mao[1], **A. Košmrlj[1]**, **M. P. Haataja[1]**, "Liquid demixing in elastic networks: cavitation, permeation, or size selection?" arXiv.2012.02787v2 [cond-mat.soft]
[1]Princeton University



γ - liquid-liquid surface tension

G - shear modulus of elastic network

ξ - pore scale of elastic network

σ_p - stress discontinuity at the liquid-liquid interface

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