Simulating three-body Casimir interactions in colloidal suspensions

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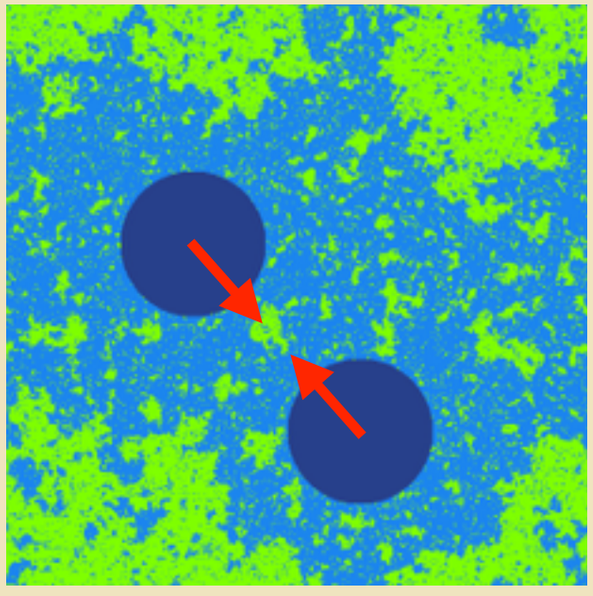
Critical Casimir force

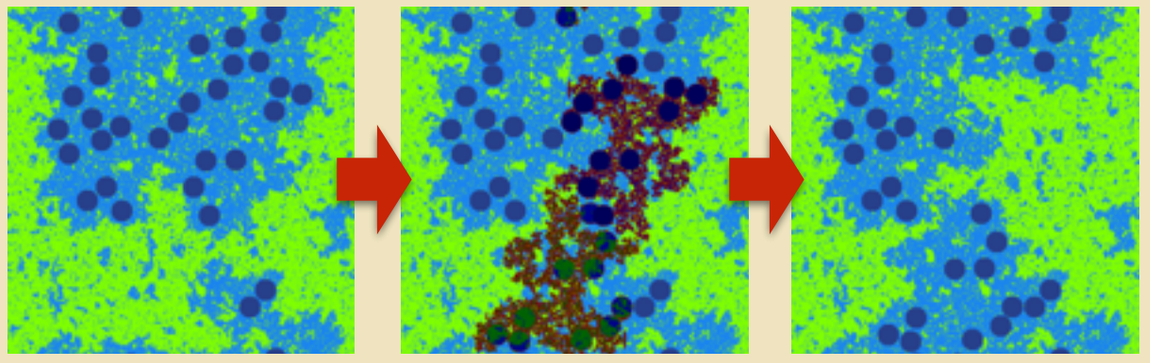
- Fluctuation-induced force near continuous phase transitions
- Causes colloids immersed in binary liquids near the demixing point to interact



- Medium: 2D Ising system with periodic boundary conditions

Monte Carlo algorithm

- Combination of the GCA by Herring and Blöte [1] and the of-lattice GGCA by Liu and Luijten [2]
- Principle: Built two symmetric clusters and exchange them



- One non-local move for medium *and* colloids with conserved order parameter
- Calculate two- and three-particle interaction potentials

[1] J. R. Heringa and H.W. J. Blöte, *Phys. Rev. E*, 57, 1998, 4976

[2] J. Liu and E. Luijten, *Phys. Rev. Lett.*, 92, 2004, 035504