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Phase behavior in binary fluid mixtures with spherical and non-spherical interactions ENRIQUE DIAZ-HERRERA, Universidad Autonoma Metropolitana (Mexico), GUILLERMO RAMIREZ-SANTIAGO, Instituto de Fisica, UNAM (Mexico), J. ANTONIO MORENO-RAZO, Universidad Autonoma Metropolitana (Mexico) — We have carried out extensive MD simulations to study the T vs. ρ phase diagram and the mix-demix transition in fluid binary mixtures with (1) Lennard-Jones, (2) Stock-Mayer and (3) Gay-Berne molecular interactions. This analysis is performed in terms of the miscibility parameter, $\alpha = \epsilon_{AB}/\epsilon_{AA}$, with $\epsilon_{AA} = \epsilon_{BB}$. When the miscibility of the mixture is in the range $0 < \alpha < 1$, a continuous critical line of consolute points appears. This line interscts the LV coexistence curve at different positions depending on the value of α, yielding mainly three different topologies for the phase diagrams. We also carried out a detailed study of the interfacial properties as function of T and α.

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