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Mixtures of Monomer and Dimer Square-well Fluids JAMES PORTER, JANE LIPSON, Dartmouth College — In previous work, we have used the continuum version of Born-Green-Yvon (BGY) theory, in conjunction with the square-well potential, to model structural and thermodynamic properties of alkanes and, in the case of one-component fluids, have also suggested mappings between the continuum and lattice versions of the theory. Having applied the lattice description to numerous mixtures, we are now interested in determining whether an analogous mapping is possible between the lattice and continuum descriptions when both are used to study mixtures. Towards this end, we present in this talk the first continuum BGY results for monomer/dimer square-well fluid mixtures. Thermodynamic and structural properties are compared with available simulation data, and the effect of changing both monomer diameters and square-well interaction strengths is examined.

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