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Size and Shape Descriptors of Two Dimensional Polymer Sheets in Solution near the Crossover Concentration SALOMON TURGMAN COHEN, JACOBI TANNER, Kettering Univ — We investigate the size and shape of two dimensional polymer sheets near the crossover concentration as a function of sheet size and concentration. Specifically, fully flexible sheets with local square connectivity in implicit, athermal solvent are investigated by molecular dynamics simulations in the NVT ensemble with a Lagevin thermostat. Sheet sizes of $N = 100, 400,$ and 1600 are explored. We monitor the average radius of gyration (R_g) tensor and the relative shape anisotropy around the cross-over concentration. Opposite to linear, one dimensional polymers, preliminary results show that the size of the sheets as measured by the average radius of gyration increases as the cross-over concentration is approached. The trends in the relative shape anisotropy suggest that the increasing overlap between the sheets at high concentrations leads to the sheets favoring flatter conformations, explaining the larger values of R_g observed.

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