Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Scaling model for symmetric star polymers RAM RAMACHANDRAN, DURGESH K. RAI, GREGORY BEAUCAGE, University of Cincinnati — Neutron scattering data from symmetric star polymers with six poly (urethane-ether) arms, chemically bonded to a C-60 molecule are fitted using a new scaling model and scattering function. The new scaling function can describe both good solvent and theta solvent conditions as well as resolve deviations in chain conformation due to steric interactions between star arms. The scaling model quantifies the distinction between invariant topological features for this star polymer and chain tortuosity which changes with goodness of solvent and steric interaction. Beaucage G, *Phys. Rev. E* **70** 031401 (2004).; Ramachandran R, et al. *Macromolecules* **41** 9802-9806 (2008).; Ramachandran R, et al. *Macromolecules*, **42** 4746-4750 (2009); Rai DK et al. *Europhys. Lett.*, (Submitted 10/2009).

Gregory Beaucage
University of Cincinnati

Date submitted: 28 Nov 2009 Electronic form version 1.4