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**Ian Johnson\*** (ijohnso1@gmu.edu), 7570 Remington Road, Manassas, VA 20109. *Bifurcation and Continuation Analysis of Equilibria of the Diblock Copolymer Equation in One Dimension*. Preliminary report.

Diblock copolymers are a class of materials formed by the reaction of two linear polymers. The different structures taken on by these polymers grant them special properties, which can prove useful in applications such as development of new adhesives and asphalt additives. The diblock copolymer equation governs the formation of these polymers. Using the software package AUTO, continuation analysis of the equilibria of the diblock copolymer equation in one dimension was performed. In addition, consideration of the energy associated with the system was performed, which enables a limited analysis of the relationships between the equilibria in the time-varying model. (Received September 23, 2010)