Meeting: 999, Nashville, Tennessee, SS 12A, Special Session on Biomathematics

999-92-86 **Colette Jeanne Calmelet*** (colette.calmelet@vanderbilt.edu), Math Dept., 3500 John Merritt Blvd, Tennessee State University, Nashville, TN 37209. *Modeling of Mesodermal Cellular Movements in Zebrafish Embryo.*

During the development of the zebrafish embryo the cells in the mesodermal layer adopt particular behaviors. The cellular mechanisms leading to extension and convergence movements in gastrulation of zebrafish embryo are not entirely known. Time-lapse images of embryonic cells moving in vivo are collected and analyzed. The cells appear to migrate in a specific direction and obey particular rules. The collective and individual motions of the cells are modeled using the center dynamics theory. Simulated cell trajectories are compared with experimental ones for various groups of cells at different stages of epiboly. (Received August 12, 2004)