

Meeting: 1004, Bowling Green, Kentucky, SS 4A, Special Session on Knot Theory and Its Applications

1004-76-220 **Cédric Weber** (cedric.weber@epfl.ch), IRRMA, Swiss Federal Institute of Technology, CH-1015 Lausanne, Switzerland, **Giovanni Dietler** (Giovanni.Dietler@epfl.ch), LPMV, Swiss Federal Institute of Technology, CH-1015 Lausanne, Switzerland, **John H. Maddocks** (john.maddocks@epfl.ch), LCVMM, Swiss Federal Institute of Technology, CH-1015 Lausanne, Switzerland, **Eric J. Rawdon** (ericrawdon@gmail.com), Department of Mathematics & Computer Science, Duquesne University, Pittsburgh, PA 15282, and **Andrzej Stasiak*** (Andrzej.Stasiak@unil.ch), LAU, University of Lausanne, CH-1015 Lausanne, Switzerland.
Hydrodynamics of ideal knots. Preliminary report.

Stereolithography technique was used to create macroscopic models of knots consisting of cylindrical tubes centered at axial trajectories of ideal geometric representations of knots. The models were made of a rigid plastic with a density of about 1.1 g/ml. Cylindrical tubes forming knots of different topological types were set to have the same length (30 cm) and diameter (0.5 cm). The different knots were then immersed and gently released into a water tank. We investigated the relation between the sedimentation speed and the average crossing number of the corresponding knots as well as the correlation between the writhe of a knot and the direction of spontaneous rotation observed during the sedimentation. (Received January 25, 2005)