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Chaotic mixing in a helix-like pipe with a periodic modulation in curvature and torsion BONGKYUN JANG, Graduate student, Department of Applied Analysis and Complex Dynamical Systems, Graduate School of Informatics, Kyoto University, MITSUAKI FUNAKOSHI, Professor, Department of Applied Analysis and Complex Dynamical Systems, Graduate School of Informatics, Kyoto University — The chaotic fluid mixing in a circular pipe with a periodic modulation in curvature and torsion caused by a steady viscous flow of small Reynolds number is examined. An approximate velocity field by an axial pressure gradient obtained under the assumption of small curvature and torsion is used in this study. The mixing properties are studied by using various methods in the theory of dynamical systems such as Poincare section.

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