Abstract Submitted
for the APR06 Meeting of
The American Physical Society

Breakup of shearless tori in the standard nontwist map
KATHRIN FUCHSS, Dept. of Physics, Inst. for Fusion Studies, UT Austin, ALEXANDER WURM, Dept. of Phys. and Biol. Sc., Western New England College, Springfield, P. J. MORRISON, Dept. of Physics, Inst. for Fusion Studies, UT Austin — The standard nontwist map is a simple model for degenerate Hamiltonian systems that describe, e.g., magnetic field lines in toroidal plasma devices with reversed magnetic shear profile. As a numerically easily accessible system, this map can be used to gain understanding of basic field line features, such as the breaking of transport barriers represented by shearless invariant tori. Breakup of several sample tori with noble winding numbers have been studied in the past.[1] Here, for a sequence of noble tori, tori breakup is investigated systematically, in order to gain insight into how the breakup of different tori are interrelated and whether the sequence can describe the breakup of non noble tori as a limiting case.


Kathrin Fuchss
Dept. of Physics, Inst. for Fusion Studies, UT Austin

Date submitted: 13 Jan 2006