

Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

Magnetic Reconnection in the Solar Wind and the Evolution of Magnetic Flux Tubes in the Heliosphere JOHN GOSLING, University of Colorado — To zeroth order, the heliospheric magnetic field, HMF, is adequately described by Parkers Archimedean spiral model of field lines open to the outer boundary of the heliosphere. However, there is ample evidence that the HMF is considerably more complex than was first described by Parker and that the field topology often evolves with distance from the Sun. Processes contributing to this evolution and complexity include, at the very least, differential solar rotation, the insertion of closed magnetic fields into the solar wind associated with coronal mass ejections, foot point motions associated with solar convection, solar wind turbulence, solar wind stream interactions and magnetic reconnection. Here we discuss magnetic flux tube evolution in the heliosphere with an emphasis on the recently recognized phenomenon of local, quasi-stationary reconnection in the solar wind far from the Sun.

John Gosling
University of Colorado

Date submitted: 02 Aug 2005

Electronic form version 1.4