

The SSX plasma physics experiment at Swarthmore College has two primary goals. First, from a fusion energy perspective, we generate a hot parcel of magnetized plasma called a spheromak that can be studied with fast electronics, and optical diagnostics. The spheromak naturally evolves to an elongated structure called a Taylor state, which could be a suitable structure for magneto-inertial fusion schemes. Second, from a fundamental physics perspective, we are interested in astrophysical phenomena that can be studied in the laboratory. These processes include plasma turbulence, magnetic reconnection, and plasma relaxation. In addition to performing experimental studies, we also are interested in modeling SSX phenomena on computers.