

Alan L. Hoffman

Education & Training

B. Engineering-Physics - Cornell University (1963)

PhD. Aeronautics & Applied Math - California Institute of Technology (1967)

Research & Professional Experience

1990 - : University of Washington - Professor (1992 →)

Manager of Redmond Plasma Physics Laboratory. Taught aeronautics courses as affiliate professor in 1990 and 1991. Then transferred full time to the University in 1992 and brought LSX facility. Modified LSX to study compact toroid applications for tokamak fueling. Presently running TCS (Translation, Confinement, Sustainment) experiment to develop methods for sustaining FRCs using Rotating Magnetic Fields.

1970 - 1991: Spectra Technology, Inc. - V.P. Plasma Physics

Principal scientist helping start up company (then named MSNW). Developed and managed projects in gas dynamics, high powered lasers, atomic physics, pulsed power, and plasma physics. Major programs were a large gas dynamic laser test facility, an atomic physics research facility, the Laser Heated Solenoid (LHS) plasma facility, and the TRX and LSX FRC devices. Also worked with commercial customers in developing X-ray sources for lithography, and developed new ideas for electro-magnetic propulsion. Have participated on both scientific and management level in both national and international magnetic fusion program. Last project was construction and operation of a \$14M plasma physics experiment (LSX) which was largest facility of its type in the world.

1969 - 1970: Boeing - Fluid mechanics group scientist

Conducted work on gas dynamic laser and high Reynolds number flow facility at Boeing Scientific Research Laboratory.

1967 -1969: Edward Air Force Base - U.S. Army Captain

Worked as flight test engineer on Army aircraft. Conducted acceptance testing of CH-47 helicopters, helped automate flight test data recording and analysis, and developed flight performance prediction models for advanced methodology group.

Publications

A.L. Hoffman, L.C. Steinhauer, H. Ferrari and R. Farengo, "Advances in singly connected closed field line plasma devices and extrapolation to POP level experiments and reactors", Nuclear Fusion **49**, 055018 (2009).

A.L. Hoffman, H.Y. Guo, K.E. Miller, R.D. Milroy, "Principal Physics of Rotating Magnetic Field Current Drive of FRCs", Phys. Plasmas **13**, 012507 (2006).

A.L. Hoffman, et. al., "Long pulse FRC sustainment with enhanced edge driven RMF current drive", Nucl. Fusion **48**, 176 (2005).

A.L. Hoffman, "RMF current drive of FRCs subject to equilibrium constraints", Nucl. Fusion **40**, 1523 (2000).

A.L. Hoffman, et. al., "Inductive FRC Accelerator for Tokamak Fueling", Fusion Technology **36**, 109 (1999).

A.L. Hoffman & J.T. Slough, "FRC lifetime scaling based on measurements from LSX", Nucl. Fusion **33**, 27 (1993).

A.L. Hoffman & J.T. Slough, "Flux, energy and particle lifetime measurements for well formed FRCs", Nucl. Fusion **26**, 1693 (1986)

A.L. Hoffman & R.D. Milroy, "Particle lifetime scaling in FRCs based on LHD resistivity", Phys. Fluids **26**, 3170 (1983).

A.L. Hoffman & D.D. Lowenthal, "Axial laser heating of 3-m θ -pinch plasma columns", Phys. Fluids **23**, 2066 (1980).

Synergistic Activities

Director of Redmond Plasma Physics Laboratory and co-PI of TCSU project

Collaborators and Coeditors

J.A. Grossnickle, University of Washington

H.Y. Guo, Tri-Alpha Corporation

K.E. Miller, University of Washington

R.D. Milroy, University of Washington

R. Farengo, Centro Atomico Bariloche

H. Ferrarri, Centro Atomico Bariloche

L.C. Steinhauer, University of Washington.