Mark Alan Chilenski

Graduate Institution: Massachusetts Institute of Technology

Graduate Discipline: Nuclear Engineering/Plasma Physics

Hometown: Renton, WA

Relevant SC Research: Fusion Energy Sciences

Research Interest:

I am interested in all aspects of experimental plasma science. At MIT I am investigating the transport of impurities in Alcator C-Mod's unique high-field tokamak plasmas through use of laser blow-off impurity injection: we use a pulsed laser to ablate some material on a slide near the plasma, then observe the resulting line radiation once the impurity enters the plasma with one of several spectrometers and several other diagnostics. The measurements of particle transport obtained can then be compared to simulations in order to get at the underlying mechanisms of how particles are transported in the plasma. I am working on upgrading one of our spectrometers to measure a profile of line emission throughout the plasma in order to measure the emission from lower charges states, farther out in the plasma. These new measurements will help us to better understand what is going on in a region of the plasma where there have been problems getting simulations to match observations in the past.

About Me:

I came to MIT to work on my PhD in nuclear science and engineering after graduating from the University of Washington with a bachelor's degree in aeronautical and astronautical engineering. While at the University of Washington, I spent four years working on the HIT-SI experiment, a plasma device investigating a novel means of inductively driving a steady current in a spheromak plasma. During that time, I worked on several diagnostics including visible light spectroscopy and silicon bolometers. I have always been fascinated by the various techniques used to make measurements of confined plasmas, which are often hotter than the Sun and changing on sub-millisecond timescales. Outside of plasma physics, I am also an avid percussionist. I particularly enjoy playing jazz and the various flavors of orchestral/wind band music and have organized several jam sessions in my graduate community at MIT. In addition to playing them, I have also sourced custom parts and built several of my own drums.