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Michigan Institute for Plasma Science and Engineering

Wednesday
March 20, 2019
3:30 pm
Room 1005 EECS

Dr. Simon Bland

Imperial College, London, UK

High Energy Density Physics Experiments at Imperial College – Megaamps and Megabars

The last 2 decades have seen an explosion in high energy density physics research, spurred on by the development of national facilities such as NIF and Z. Despite their relative small size, universities have played a leading role in this research – both with 'in house' experiments and through joint work on larger facilities. In this talk I will describe some of our research at Imperial College including how we have pioneered the use of plasmas ablating from wire array z-pinches to create astrophysical relevant experiments and explore radiative shock waves; how we are using pulsed power driven wire explosions to create highly convergent shock waves for equation of state measurements; and how we utilize new X-ray diagnostics to explore materials in situ - whilst having fun with a shoe boxed sized pulser on a synchrotron.

About the Speaker: Dr. Simon Bland is a senior lecturer at Imperial College London, leading efforts to produce materials in extremes of pressure, temperature and density through short bursts of electrical energy. His group runs a 2 million ampere cutting-edge pulsed power facility – MACH-dedicated to isentropic compression and convergent shock waves, whilst also developing and using novel diagnostic techniques. Prior to establishing his own research program, Dr. Bland worked on the MAGPIE facility exploring wire array z-pinches for fusion and laboratory astrophysics. He has authored or co-authored more than 100 papers, and greatly enjoys working with a team of undergraduates and graduates in his research.