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UKAEA recruitment team
Culham Centre for Fusion Energy
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February 8, 2018

Application for position of *Scrape-Off Layer Turbulence Physicist*

Dear Sir or Madam,

I should like to apply for the role of *Scrape-Off Layer Turbulence Physicist*, for which I feel I am particularly well suited. I see MAST-U, with its unique visible imaging capabilities, cutting edge fast framing cameras, versatile divertor science facility and powerful mid-plane reciprocating probe system, as an extremely exciting opportunity for significantly advancing our understanding of scrape-off layer (SOL) physics. In particular, it will be fascinating to investigate the effects of the super-X divertor and varied divertor and detachment regimes on both upstream and divertor SOL dynamics.

My PhD project as part of the Fusion CDT, entitled '*Analysis of Scrape-Off Layer Plasma Filaments Through Fast Visible Imaging*', has given me a strong background in SOL physics, particularly filamentary transport of particles. I already have considerable experience in the analysis of fast visible camera data on MAST and I see this position as the perfect opportunity to develop this expertise further, particularly in taking advantage of the stereoscopic imaging measurements that will be possible on MAST-U. My existing familiarity with the MAST-U tokamak and its visual camera and Langmuir probe systems will enable me to quickly start applying MAST-U's diagnostics to their full potential.

My work performing novel SOL power decay length measurements, using IR thermography on JET, further demonstrates my experience with SOL physics, imaging measurements and working within different research groups. My work on neutral beam negative ion sources has provided me with valuable experience working hands on with vacuum systems and performing Langmuir probe measurements in weakly magnetised RF plasmas. I am highly proficient in python and have developed the large, sophisticated Elzar suite of tools for enhancing, analysing and reviewing fast camera data.

I am very well organised and believe I will operate the diagnostic systems with efficiency, applying good practice and maintaining accurate records of measurements, adaptations and changes. I appreciate my experience with electrical probes is not at the same level as that which I have with imaging techniques, but I believe I can rapidly develop these skills. My strong record of publications at this early stage in my career, with contributions towards 8 publications and a first author paper in preparation, demonstrate my proven ability to conduct high quality scientific research.

While my anticipated thesis submission date is not until early 2019, I hope my strengths and experience in the area will justify a later start date for the position. I attach my CV with further evidence of my suitability for this position and I would be grateful for the opportunity to demonstrate my capabilities further at interview.

Yours faithfully,

Tom Farley

Attached: curriculum vitæ