Project Title:
Continuum and Kinetic Laser Plasma Simulations with AMR/ML-AI Codes

Project Reference Code: Arslanbekov-CFDRC

Name of Project Leader: Dr. Robert Arslanbekov

Host Facility: CFD Research

Internship Location: CFD Research

Host Facility Location: Huntsville, AL

Project Description (roughly 300 words):
CFD Research is seeking one intern with good knowledge of or willing to learn C, C++, Octave/Matlab programming languages or with skills to apply commercial software packages to multi-physics modeling combined with ML/AI enhancements. Some background knowledge of plasma, chemistry and laser physics and computational physics is a plus. The intern will learn how to program commercial quality, as well as research, software or to apply it to a variety of problems related to gas discharge and laser plasma physics continuum and kinetic settings, and run software on Linux platforms in HPC environment using ML/AI tools. The intern will work closely with researchers from the FTPP institutions to apply the computational tools to various problems of interest. Some levels of qualifications are required in visualization & data exploitation on Linux and Windows platforms. Work experience with MS Office applications for reporting and presentation preparation is required.

US citizens will be housed at CFDRC for their internship and non-US citizens will be fully remote.

Disciplines: Gas Discharge Physics, Laser Physics, Computational Plasma Physics, Electrical and Computer Engineering, ML/AI techniques

Importance:
Plasma and laser applications are important for variety of laboratory and industrial applications.

Requirements:

- Preferred Major
  - Physics, Computational (CS/CE).
- Class work
  - Physics, math, or other background (list of specific level of classes are necessary)
- Programming knowledge
  - Linux/Windows.
- Software knowledge
  - C, C++, COMSOL and/or Octave/Matlab
- Other

Biography (roughly 100-150 words):
Dr. Robert Arslanbekov holds PhD degree in Plasma and Computational Physics and is Senior Principal Scientist at CFD Research. His computational and experimental work related to plasmas includes various plasma device ranging from fusion, high-temperature, plasmas to laboratory, low-temperature, plasma devices (lasers, arcs, light sources, material & medical treatment).

Is U.S. citizenship required to participate in this project? No. (US citizens will be housed at CFDRC for their internship and non-US citizens will be fully remote)

Contact information:
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