

FY24 whitepaper call for RF Test Cell Canonical Focus Experiments (CFE)

AFOSR Propulsion and Power Portfolio

FAQs

What size/configuration/frequency range are you thinking of? ICP or CCP? Magnetized?

The short answer is that I don't know where to focus the community. I'm going to leave it to you to figure out what configuration optimizes your ability to build/simulate/test/observe different plasma phenomena in the context of studying an interesting science challenge(s). At this very early stage, I expect more, rather than less, diversity in what is proposed.

Why did you shift focus away from DC discharges?

This pivot to AC is largely driven by the idea that future propellants may generate very reactive plasmas and reasonable lifetime for exposed electrodes will be a nightmarish materials problem. While many of you are much more familiar with DC discharges, common physics (e.g. current instabilities, ionization instabilities) can still be studied with appropriate modifications to the experimental design.

I've got multiple great ideas – which should I propose?

You are welcome to submit multiple whitepapers, but I would focus on those which are most innovative and are able to show at least some demonstrable progress in the first year. Note that there is no extra credit for submitting a dozen whitepapers.

I plan to collaborate with a trusted colleague. Can we submit a joint whitepaper?

I do not encourage you to submit the whitepapers jointly. Each whitepaper should represent a severable effort. If your approach has critical external dependencies (particular input datastreams), please call them out. If you feel like you absolutely have to include collaborators in your whitepaper, I may request proposals for severable parts of the proposed effort.

How do we accomplish the goal of tighter integration then?

I'm going to host multiple workshops per year for this CFE. If all goes well, at these workshops, you will all be showing off your approach/progress and your peers will indicate whether they see value in your work or where their products are relevant to you. I expect significant maturation of specific test cell concept(s) as we all get smarter.

How long do you plan to fund this effort?

I plan to add new efforts to this CFE every year for the foreseeable future despite severe budget challenges on the horizon. As you can imagine, this means that I will be able to fund only a fraction of the efforts proposed each year.

How much should I ask for?

These CFE efforts should not exceed the scope of resources/timeframe of existing portfolio tasks. This should guide your ROM cost estimate.

-jwk, 11 Mar 2024