1. Purpose of Experiments

Include immediate goal of the experiments, scientific importance and/or programmatic relevance. Refer to any relevant program milestones or ITER R&D commitments.

Troubleshooting HIREX in order that all 5 chords work reliably every shot. Obtain relative sensitivities on all chords and determine instrumental resolutions. Optimize argon puffing technique. Eliminate RF pickup problems.

2. Background

Discuss Physics basis of the proposed research, Prior results at Alcator or elsewhere, and any related work being carried out separately

No physics, just hardware and software.

3. Approach

Describe the methodology to be employed; explain the rationale for the choice of parameters, etc. Describe the analysis techniques to be employed in interpreting the data, if applicable. If the approach is standard or otherwise self-evident, this section may be absorbed into the Experimental Plan

Would like to point adjacent spectrometers at the same location in the plasma to determine relative sensitivities and instrumental widths. Scan slightly in wavelength to verify any differences across each detector. Compare Mo and Ar line widths for each spectrometer. Optimize argon puff for minimum perturbation to the plasma, with maximum counting rates. Determine if RF pickup problems have been rectified.

4. Resources

4.1 Machine and Plasma Parameters

Give values or range for:

Toroidal Field: 5T
Plasma Current: 400 kA (any)
Working gas species: H2
Density: 5 e19 nl (any)
Equilibrium configuration (if possible, refer to database equilibria): any
Pulse length, typical current & density waveforms, etc. Refer to database or sketch desired waveforms: any

4.2 Auxiliary Systems

RF Power, pulse length, phasing: high power
Pellet Injection (species):
Impurity blow-off injection:
Special gas puffing: Ar
Other:

4.3 Diagnostics
List required diagnostics, and any special setup or configuration, e.g. non-standard digitization rate.
none

4.4 Neutron Budget
Estimate the neutron dose rate at the site boundary. Give basis for estimate. (Once some experience has been gained a standard formula will be provided for estimating dose rates.)
none

5. Experimental Plan

5.1 Run sequence plan
Specify total number of runs required, and any special requirements, such as consecutive days, no Monday runs, extended run period (10 hours maximum), etc.
Ar puffing on all shots, unless there are specific objections

5.2 Shot sequence plan
For each run day, give detailed specification for proposed shot sequence: number of shots at each condition, specific parameters and auxiliary systems requirements, etc. Include contingency plans, if appropriate.
piggy back off any runs

6. Anticipated Results
Discuss possible experimental outcomes and implications. Indicate if the program may be expected to lead to publications, milestone completions, improved operating techniques, etc. Indicate if the experiments are intended to contribute to a joint research effort, or an external database.
A reliable Ti diagnostic, which can provide Ti(r,t)

7. References
Include references both to external and internal literature or communications which bear on this proposal. See Section 2.