

International Collaboration Meeting – KSTAR  
S.A. Sabbagh: 4/23/12

Notes and discussion: Proposal on “3d MHD and Long Pulse Stability Physics and Control”  
- specific focus on KSTAR at this meeting

- JK Park (JKP): Can 1 person work on more than one project/proposal/team?
- A: Yes.
- Steve Sabbagh (SAS): we also need to connect strongly to US devices (e.g. NSTX-U), but we need to coordinate resources (discussed already with J. Menard); if GA joins team, would expect that same would apply for DIII-D
- H. Neilson(HN): this proposal will be connected to JET as well
- Joon-Wook Ahn (JWA): What devices are involved in this solicitation?
- HN: Tokamaks in general  
(SAS note: HN: emphasized EAST, JET, KSTAR in a separate meeting on 4/24/12)
- HN: question on ECH launcher and physics
- Bob Ellis (BE): for NTM control, need 1-2 more MW for NTM control (new gyrotron and launcher)
- HN: how was funding of this handled in the past?
- BE: was split 50/50 PPPL/NFRI, proposed steady-state launcher could be handled similarly, and staged across years
- SAS: could serve as an actuator right now with the 1.7GHz system at 0.8MW – large effect on the core profile demonstrated at Muju mtg. Feb 2012. Proposal idea for rotation control endorsed by NFRI, and is part of the present plan
- HN: E. Kolemen working on steerable ECH launchers now at GA
- SAS: Ege is on board in our FY12 plan to help KSTAR with r/t equilibrium control (w/Mueller), should tap for ECH experience as well
- Egemen Kolemen (EK): planned contributions on (i) equilibrium control, (ii) real-time mirror control for ECCD&ECH. Can use experience at DIII-D. Suggests that catching the NTM during growth might allow NTM control earlier in the present plan, as it might require less input power.
- HN: JET representatives have asked if KSTAR is doing 3D equilibrium control?
- EK: No – doesn't think so
- SAS: Tools exist for this, and presently planned activity can address error field control. Plan for RWM control can address this (planned activity with planned experiments); JK Park experiments on error field/mode locking already conducted, and planned completion 2012. Sensors expansion for this effort already discussed with J.G. Bak at NFRI – but a more extensive diagnostic set would be needed for higher-n error fields
- JKP: Can also approach this by thinking of the problem as a “weak stellarator”
- Calvin Domier: mentions that UC Davis interest is connected to both KSTAR and EAST