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Magnetic feedback-controlled error-field correction and RWM stabilization,* Y. In, V. Svidzinski, J.S. Kim, *FAR-TECH,* M. Okabayashi, *PPPL*, G.L. Jackson, R.J. La Haye, E.J. Strait, *GA,* J. Hanson, M.J. Lanctot, H. Reimerdes, *Columbia U.,* Y.Q. Liu, *UKAEA*
— The sensitivity of resonant field amplification to non-axisymmetric error field varies significantly, subject to the proximity to the resistive wall mode (RWM) stability conditions. Recent DIII-D experiments show that simultaneous operation of magnetic feedback-controlled error-field-correction (EFC) and direct feedback on RWM would be a practical solution, not only achieving RWM stabilization, but also performing the necessary EFC in unstable RWM regime. Also, when the bandwidth of the magnetic feedback is broadened beyond wall characteristic frequency, high beta plasmas were observed to have been sustained longer than with a narrow bandwidth feedback. It is conjectured that resonant magnetic perturbations driven by various MHD bursts (e.g. off-axis fishbone), as well as uncorrected error field, can be removed quickly by high frequency magnetic feedback control, before magnetic islands are formed.

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