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Versatile controllability of non-axisymmetric magnetic perturbations in KSTAR experiments HYUNSUN HAN, Y.M JEON, Y. IN, J. KIM, S.W. YOON, S.H. HAHN, H.S. AHN, M.H. WOO, B.H. PARK, J.G. BAK, National Fusion Research Institute, KSTAR TEAM — A newly upgraded IVCC (In-Vessel Control Coil) system equipped with four broadband power supplies, along with current connection patch panel, will be presented and discussed in terms of its capability on various KSTAR experiments. Until the last run-campaign, there were impressive experimental results on ELM(Edge Localized Mode) control experiments using the 3D magnetic field, but the non-axisymmetric field configuration could not be changed in a shot, let alone the limited number of accessible configurations. Introducing the new power supplies, such restrictions have been greatly reduced. Based on the preliminary commissioning results for 2015 KSTAR run-campaign, this new system has been confirmed to easily cope with various dynamic demands for toroidal and poloidal phases of 3D magnetic field in a shot. This enables us to diagnose the plasma response in more detail and to address the 3-D field impacts on the ELM behaviors better than ever.

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