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First X-point tokamak operations in the RFX-mod experiment A. ZEMENGO, L. ZANOTTO, P. BETTINI, R. CAVAZZANA, L. GRANDO, G. MARCHIORI, L. NOVELLO, A. SOPPELSA, T. LUCE, G. JACKSON, CONSOZIO RFX TEAM, GENERAL ATOMICS TEAM — RFX-mod is a Reversed Field Pinch which can be run as a low current ohmic tokamak, thanks to the flexibility of the power supply systems. RFX-mod is equipped with an MHD control system, based on a set of 48x4 saddle coils individually fed by current controlled power amplifiers, which represents the state-of-art in the field of MHD control of magnetized plasmas. This system has been successfully exploited in Tokamak discharges to study MHD stability issues relevant to next step devices as ITER. Recently, the possibility of performing tokamak discharges in X-point configuration has been explored, assessing the impact on the machine systems. A first experimental campaign was run in April 2011 with the aim of check the feasibility of a Double Null (DN) X-point tokamak scenario, first with vacuum shots and then with preliminary plasmas with open loop transition from circular to DN shaping. The paper will report the outcome of the campaign, which has successfully demonstrated that the transition to the DN X-point shape is possible without any particular problem. Reconstructions of the shape obtained will be presented, which proves the capability of controlling the plasma shape. This opens interesting opportunities towards the path of achieving an H-mode plasma.

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