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Radiating Divertor Behavior in Single- and Double-Null Plasmas in DIII-D[1] T.W. PETRIE, N.H. BROOKS, A.W. HYATT, M.J. SCHAFFER, M.R. WADE, W.P. WEST, General Atomics, M.E. FENSTERMACHER, M. GROTH, C.J. LASNIER, LLNL, J.G. WATKINS, SNL — The ability to concentrate impurities in the divertor region to provide effective radiative divertor operation has been found on DIII-D to be sensitive to the divertor magnetic geometry and the grad-B drift direction. Argon impurities were injected into the private flux region of one divertor, while deuterium flow into the divertors was simultaneously enhanced by a combination of midplane gas puffing and divertor cryopumping. For DN plasmas it was difficult to balance the radiated power between divertors during argon injection; significant increases in radiated power and argon concentration were observed mostly in the divertor that was *opposite* the grad-B drift direction. For SN plasmas, there was a higher divertor argon accumulation in the divertor when the grad-B drift direction was away from the dominant X-point, and so this setup may provide the best prospect of successfully coupling a radiating divertor approach to a high performance H-mode plasmas.

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