

Heat flux management via advanced magnetic divertor configurations and divertor detachment

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Abstract. The Snowflake Divertor (SD) control and detachment control to manage the heat flux at the divertor are successfully demonstrated at DIII-D. Results of the development and implementation of these two heat flux reduction control methods are presented. The SD control algorithm calculates the position of the two null-points in real-time and controls shaping coil currents to achieve and stabilize various snowflake configurations. Detachment control stabilizes the detachment front fixed at specified distance between the strike point and the X-point throughout the shot.