

Dependence of Heat and Particle Transport on the Ratio of the Ion and Electron Temperatures

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Experiments in high confinement (H-mode) plasmas on the DIII-D tokamak show that the heat and particle transport are sensitive to the ratio of the ion and electron temperatures. Increasing the ion to electron temperature ratio decreases the electron and ion heat transport and the particle transport regardless of which temperature is being varied. A likely explanation of these results is the dependence of the ion temperature gradient instability on the ratio of the ion and electron temperatures.