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Analysis of Momentum Transport in Alcator C-Mod Plasmas with No Momentum Input using a Simplified Diffusion Model[1] CHARLES BOCCHINO, University of Maine, YURI PODPALY, JOHN RICE, ALEXANDER INCE-CUSHMAN, MIT PSFC — High resolution x-ray spectrometers have shown propagation of momentum from the edge to the center of Alcator C-Mod plasmas. This propagation was modeled by a one dimensional, source free momentum transport equation (ignoring convection and treating boundary conditions as a step function). Using this model to fit the central velocities of the EDA H-modes and L-modes yields a diffusivity coefficient, which corresponds to a momentum confinement time, τ_ϕ. Comparing τ_ϕ with plasma parameters provides means to determine which, if any, correlations exist for the momentum confinement time.

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