

Abstract Submitted
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Application of new fitting routines on edge Thomson scattering profiles from Alcator C-Mod¹ N. GIERSE, University of Cologne, J.W. HUGHES, B. LABOMBARD, B. LIPSCHULTZ, MIT PSFC — The edge plasma region plays a key role in the performance of tokamak fusion devices, as transport in this region directly affects the energy confinement properties of the discharge and determines particle and heat loads on the first wall and the divertor. Recent experiments in Alcator C-Mod show strong evidence that transport in edge is governed by critical gradients physics in both L-mode and H-mode. To examine profiles from experimental millimeter resolution Thomson scattering edge data a modified tanh fit is routinely performed which reports the global pedestal parameters. The goals of this work are to apply new fitting techniques (e.g. B-splines), and then compare results to find the most suitable fitting routine which does not impose artificial constraints on the result. The results of such fits for a wide variety of L- and H-mode profiles are then stored in a recently constructed database with complete profile information. This allows us to conduct profile studies over a wide range in C-Mod operation space and over a range of radial locations in the edge region.

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