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Profile Similarity in GYRO Simulations of Bohm and GyroBohm Scaled DIII-D L- and H-mode Pairs,* R.E. Waltz, J. Candy, C.C. Petty, *GA* — Because the largest ρ^* variation is only 1.6-fold, the experimental difference between Bohm and gyroBohm scaling in DIII-D dimensionally similar pairs corresponds to bottom and top of error bars in the temperature profile. Here we provide an error analysis from profile dissimilarity in full physics GYRO simulations of the best DIII-D L- and H-mode pairs. Dissimilarity can arise from imperfect experimental data or from the simulations failing to keep profiles fixed. The GYRO simulations track the experimental Bohm scaling of DIII-D L-mode pair (good similarity) and the super-gyroBohm scaling of the H-mode pair (poor similarity). We test the scalings with perfect similarity pairs obtained by "projecting" the experimental data from one discharge to another via the similarity rules, e.g. $T_2(r) = T_1(r)(\rho_{*1}/\rho_{*2})$, etc. The L-mode (H-mode) GYRO simulations of perfectly similar profiles have Bohm (exactly gyroBohm) scaling maintaining temperature gradients fixed. We also track the breakdown of these scalings by projecting beyond the 1.6-fold experimental variation in ρ_*.

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