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Recent developments in scaling of wall-bounded flows MATTHIAS H. BUSCHMANN, Institut für Luft- und Kältetechnik Dresden, Dresden, Germany, MOHAMED GAD-EL-HAK, Virginia Commonwealth University, Richmond, Virginia, USA — Proper scaling of a fluid flow permits convenient, dimensionless representation of experimental data, prediction of one flow based on a similar one, and extrapolation of low-Reynolds-number, laboratory-scale experiments to field conditions. This is a particularly powerful technique for turbulent flows where analytical solutions derived from first principles are not possible. We extend in this presentation our recent work on scaling of turbulent wall-bounded flows (*Prog. Aerospace Sciences* **42**, p. 419–467, 2007) with respect to the most topical developments. The actual research tendencies in scaling go more and more toward investigating boundary layers under the influence of pressure gradient and/or of wall-roughness. Additionally, some new ideas employing local Kolmogorov scales arose. All together four main groups of questions are formulated that hopefully will be answered by future research.

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