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Abstract for an Invited Paper
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**Numerical Simulations of Strong Incompressible Magnetohydrodynamic Turbulence**[1]

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Magnetized turbulence pervades the universe and is likely to play an important role in a variety of astrophysical processes. Magnetohydrodynamics provides the simplest theoretical framework in which phenomenological models for the turbulent dynamics can be built. Numerical simulations are widely used to guide and test the theoretical predictions; however, simulating MHD turbulence is not without its difficulties. Computational power limits the simulations to parameter regimes that are much less extreme than those in astrophysics and often simplifying assumptions are made in order that a wider range of scales can be accessed. After describing the competing theoretical predictions and the numerical approaches that are often employed in studying strong incompressible MHD turbulence, I will present the findings of a series of high-resolution direct numerical simulations. I will discuss the effects that physically motivated simplifying assumptions can have on the numerical solution and its physical interpretation.

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