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Abstract for an Invited Paper  
for the APR05 Meeting of  
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**CMB measurements and early universe cosmology**

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I will summarize the current constraints on inflation from CMB measurements and complementary probes of cosmology. I will discuss the importance of a measurement of primordial tensor modes, which fixes the energy scale of inflation; this is arguably the single most interesting cosmological parameter that is not currently fixed by observations. Finally, I will consider the exciting prospect of potentially observing modifications to the power spectrum of cosmological perturbations that might be introduced by new physics at the shortest length scales, using future ultra-high-precision CMB data.