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Abstract for an Invited Paper  
for the SES10 Meeting of  
the American Physical Society

### **Searches for Gravitational Waves in LIGO Data**

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I will discuss the challenges involved in searches for gravitational waves in LIGO data. I will give an overview of some of the sources searched for like pulsars, supernovae, and neutron star / black hole binary coalescences. I will also discuss the challenges posed by non-stationary and non-Gaussian noise transients, and methods for improving confidence in a prospective detection.