

Hello

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I am interested in detection of high-frequency gravitational wave
via Rydberg atom Electromagnetically Induced Transparency (EIT)



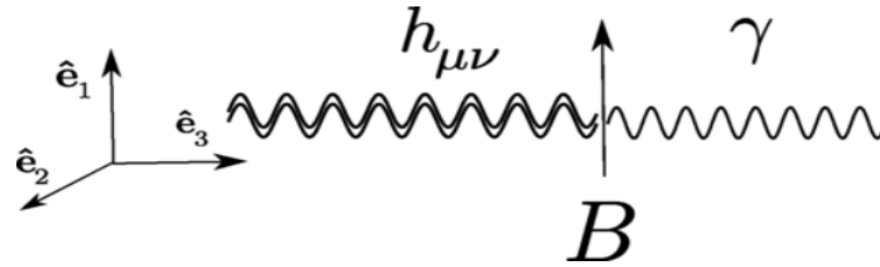
Metric equation: $ds^2 = (\eta_{\mu\nu} + h_{\mu\nu})dx^\mu dx^\nu$

Metric tensor: $g_{\mu\nu} = \eta_{\mu\nu} + h_{\mu\nu}$

Minkowski metric = diag.(-1,1,1,1): $\eta_{\mu\nu}$

Perturbation metric: $h_{\mu\nu}$

Inverse Gertsenshtein effect



Rydberg atom :

- ▶ Ultra-sensitive quantum sensor
- ▶ High n excited state $\longrightarrow$ Large electric dipole moment

We will use Rydberg atom EIT to detect the small induced electric field