

Constraints on massive gravitons from pulsar timing and astrometric measurements

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We show that the modern accuracy of pulsar timing (about 0.2 mcs) and astrometric measurements (about 100 microarcsec) put strong constraints on a possible mass of gravitons in some theories of gravitation (in particular, developed by Dubovsky et al. 2005) predicting a strong monochromatic stochastic gravitational wave background. The bounds are especially strong when taking into account the surfing effect for gravitons (the difference in the velocity of graviton propagation and the speed of light). We conclude that massive gravitons are excluded as viable candidates for cold dark matter.