"Universality in the classical limit of gravitational scattering"

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Abstract: In this talk I will describe recent progress in calculating the gravitational deflection angle in General Relativity as well as theories with varying amounts of supersymmetry. I will explain how this quantity can be extracted from the large angular momentum limit of four point scattering amplitudes using eikonal or partial wave techniques. I will show through explicit calculation that the classical corrections to the massless angle are universal though third order in Newton’s constant, and match an old proposal by Amati, Ciafaloni and Veneziano. Similarly, I will provide some evidence that the same is true in the massive case at high energies. Finally, I will discuss the relevance of these results in the context of Post-Minkowskian (PM) binary hamiltonians with application to LIGO physics.