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Constraining theories of gravity from Light Deviation Experiments[1] RICHARD BUSTOS, Loyola Univ, TIRTHABIR BISWAS, Professor Loyola Univ, DR. CARL BRANS COLLABORATION, DR. TIRTHABIR BISWAS COLLABORATION — Modifications of Einstein's theory of General Relativity (GR) are notorious for introducing ghosts and tachyons which renders these theories classically unstable and any attempts to quantize them doomed to fail. Over the last few years, concrete criteria on covariant modifications to GR have been derived that ensures that the gravitational theory is free from such instabilities, at least, around the Minkowski vacuum. The most general consistent action can be parameterized by two mass scales: the first one controls the scale of nonlocality in the graviton interaction, and the second characterizes the mass of a Brans-Dicke type scalar mode that can be present in the metric tensor. Our goal has been to develop techniques to directly constrain these mass parameters from experimental tests of GR. In particular, I will talk about the constraints from the light bending experiments.

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