

Binary pulsars provide some of the tightest current constraints on modified theories of gravity. These binary pulsars are particularly good at constraining scalar-tensor theories, which can predict large deviations from general relativity in the strong field, while passing Solar System constraints. In this talk, I will present constraints for two scalar-tensor theories using a set of binary pulsar observations and considering a large set of realistic equations of state. These constraints are obtained using Bayesian methods through Markov-Chain-Monte-Carlo simulations that explore the likelihood surface. Our results are consistent with prior constraints obtained from a 1-sigma analysis, although our framework allows for the marginalization of the posteriors over the masses and the equations of state in a systematic fashion.