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**Correlations Between Cosmological Parameters and Modified Gravity Parameters when Testing Gravity at Cosmological Scales** JASON DOSSETT, MUSTAPHA ISHAK, The University of Texas at Dallas, JACOB MOLDENHAUER, Francis Marion University — Motivated not only by the pressing question of cosmic acceleration but also by the proposals of some extensions to general relativity that would manifest themselves at large scales of distance, the testing of general relativity at cosmological scales has become a possible and timely endeavor. Here, we analyze correlations between modified gravity growth parameters and some core cosmological parameters using the latest cosmological data sets. We use known functional and binning approaches, and a new hybrid approach to evolve the modified gravity parameters in redshift (time) and scale. The hybrid approach combines a binned redshift dependence and a smooth evolution in scale avoiding a jump in the matter power spectrum. The formalism developed to test the consistency of current and future data with general relativity is implemented in a publicly available package *ISiTGR* (*Integrated Software in Testing General Relativity*). We find for all evolution methods that modified gravity parameters are significantly correlated with  $\sigma_8$  and mildly correlated with  $\Omega_m$ . These degeneracies will need to be taken into consideration when using future high precision data.

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