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Spontaneous Scalarization of Massive Fields FETHI M. RAMAZANOGLU, FRANS PRETORIUS, Princeton University — Spontaneous scalarization is a phenomenon in certain scalar-tensor theories where large deviations from general relativity can be observed inside compact stars, while the known observational bounds can also be satisfied far away. This scenario has been investigated for massless scalars and binary neutron stars using numerical relativity, but the parameter space for such theories have been severely restricted by recent observations. Here, we present our results on the spontaneous scalarization of massive scalars. We simulate cases with different equations of state and scalar field parameters, and comment on the detectability of the scalar field effects from the gravitational wave signal.

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