

# Effective Field Theory Approach to Binary Systems in Scalar-Tensor Theories

*Thursday 11 January 2024 13:30 (30 minutes)*

Theories beyond General Relativity typically contain at least one additional scalar degree of freedom, which effectively mediates an additional force. While this force must be highly suppressed in low-density environments—in order to pass current constraints—it generically leads to deviations from General Relativity in high-density / high-curvature environments, such as neutron stars and black holes, and thus impacts their observables. I will discuss how binary systems in scalar-tensor theories can be treated using an effective field theory approach and present results regarding observables such as the energy loss and the gravitational wave spectrum.

**Presenter:** DIEDRICHS, Robin Fynn (Goethe University Frankfurt)