UNIVERSITY OF COPENHAGEN
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Referee Report: Thesis Skoupý

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To whom it may concern,

It is with great pleasure that I have read Mr. Viktor Skoupý's Doctoral thesis titled: "Gravitational wave templates from Extreme Mass Ratio Inspirals". This thesis deals with calculating the post-adiabatic corrections to the dynamics of Extreme Mass Ratio Inspirals (EMRIs) due to the spin on the smaller of the two components. EMRIs are a key source of gravitational waves for the planned space-based gravitational wave observatory LISA. For the observation and analysis of these sources, it is essential that all post-adiabatic corrections are known. Viktor's contributions will be indispensable.

Prior to Viktor's efforts these had only been explored in the simplest case of aligned spin quasi-circular orbits. In what can only be described a "tour de force" Viktor has calculated these post-adiabatic corrections in the fully generic case of precessing spins and eccentric orbits. This is a highly technical calculation, which required both creativity and ingenuity.

In addition, Viktor has studied the effect of the post-adiabatic spin corrections on the evolutions of EMRIs in the case of eccentric spin-aligned configurations. For this he has used innovative spectral interpolation techniques to interpolate his numerical results over parameter space. This will (hopefully) soon lead to important follow up work, examining the measurability of the secondary spin in more complex orbital configurations.

This thesis proves Mr. Skoupý's ability to do creative scientific research beyond any reasonable doubt. The thesis is clear and well-written, and Viktor's use of English is direct and effective, as is most desirable in scientific writing.

Yours sincerely,

Maarten van de Meent
Assistant Professor