

Review on the article  
“Scattering from compact objects: Regge poles and the CAM method”

This is a very nice article, technical but clear and well referenced. This article definitely deserves publication in PRD, but there are three points which I think could be explained a bit more in detail:

(i) Could the Authors describe the limit  $\alpha \rightarrow 0$ , which corresponds to a continuous effective potential. According to eq.(35) this limit leads to  $\mathcal{R} = 0$ , in which case eq.(38) has no solution. Does this mean that, in the black hole case for example, where the effective potential is continuous, the scattering matrix has no poles?

(ii) Is it possible to give a more precise order of magnitude of terms neglected in the lowest order WKB approximation? The latter corresponds to an expansion in  $(M\omega)^{-1} \ll 1$ , but there is another length scale, which is the radius  $R$  of the compact object. Does the latter play a role in the WKB expansion?

(iii) Is there a qualitative argument for the number of Regge poles to take into account for the CAM theory to be accurate? Related to this, is there also a qualitative argument which could justify neglecting or not the background integrals?