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$K\pi$ scattering length at physical quark masses using all-to-all methods

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The scattering length is an important quantity that describes scattering at low energies. We will present our evaluation of the $K\pi$ scattering length in the isospin $I = \frac{1}{2}$ and $I = \frac{3}{2}$ channels. The computation uses the RBC-UKQCD 2+1-flavour ensembles with Domain Wall Fermions at near-physical quark masses. With the help of all-to-all methods, we construct the correlation functions, and we handle excited states and round-the-world effects to obtain a stable result.

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