Three-body Thomas-Ehrman shifts of analog states of $^{17}\text{Ne}$ and $^{17}\text{N}$

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Abstract The lowest-lying states of the Borromean nucleus $^{17}\text{Ne}$ ($^{15}\text{O}+p+p$) and its mirror nucleus $^{17}\text{N}$ ($^{15}\text{N}+n+n$) are compared by using the hyperspheric adiabatic expansion. Three-body resonances are computed by use of the complex scaling method. The measured size of $^{15}\text{O}$ and the low-lying resonances of $^{16}\text{F}$ ($^{15}\text{O}+p$) are first used as constraints to determine both central and spin-dependent two-body interactions. The interaction obtained reproduces relatively accurately both experimental three-body spectra. The Thomas-Ehrman shifts, involving excitation energy differences, are computed and found to be less than 3% of the total Coulomb energy shift for all states.