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**Paired composite fermion wavefunctions for excitations at  $5/2$**   
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State University — The Pfaffian wave function, which is thought to be relevant for  
the ground state at filling fraction  $\frac{5}{2}$ , represents a paired state of composite fermions.  
It can be expressed as an antisymmetrized bilayer (331) wave function. This formu-  
lation can be extended to construct wave functions for neutral as well as charged  
excitations of the Pfaffian. The space spanned by the quasihole excitations exactly  
matches that of the previously known quasihole wave functions. By comparison to  
exact results with up to 14 particles, we find that our neutral excitations and also  
the quasiparticle excitations describe well the actual excitations of the model three  
body interaction for which the Pfaffian ground state wave function is exact. The  
relevance to the solutions of the second Landau level Coulomb interaction is less  
conclusive. Also, the counting of states on the quasihole and quasiparticle sides is  
significantly different. Relation of our wave functions to other ansatz wave functions  
in the literature will be discussed.

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