Nuclear structure effects on proton emission from odd-odd nuclides

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The interpretation of energies and half-lives from odd-Z, even-N nuclides has proven mostly straight forward as the dominant proton branch has always been found to populate the 0^+ ground state of an even-even nuclide. As a consequence, the proton decay rate reveals information about the angular momentum of the parent state and usually permits a direct assignment of the spin and parity of the parent proton-emitting level. On the other hand, proton emission from odd-odd nuclides populates levels in a daughter odd-N nuclide. While the proton emission rate can still usually be used to deduce the angular momentum of the emitted proton, the spin and parity of the parent state will be dependent upon the spin and parity of the daughter state that is populated. In this presentation, the structure of odd-odd nuclides in regions where proton emission has been observed will be discussed in relation to the structures of the adjacent odd-mass nuclides. The prospects for using fine structure observed for proton emission from odd-odd nuclides to deduce information about the structure of both the parent and daughter nuclides will be examined.