MICROWAVE SPECTRA, DIPOLE MOMENTS AND EQUILIBRIUM STRUCTURES OF (Z)-PENT-2-ENE-4-YNENITRILE AND MALEONITRILE

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The rotational spectra of 10 isotopomers of (Z)-pent-2-ene-4-ynenitrile and 6 isotopomers of maleonitrile were measured using pulsed supersonic nozzle, Fourier-transform microwave spectroscopy. The ground state rotational constants in each case were adjusted for vibration-rotation interaction effects using *ab initio* force field calculations. The resulting equilibrium rotational constants were in very good agreement with those from high level *ab initio* calculations. Stark effect measurements allowed dipole moments of 3.53(3) D and 5.32(6) D, respectively to be determined for the two molecules. The equilibrium structural parameters and comparisons with calculated values will be presented.