A MOLECULE WITH A ROTATING CAP: THE ROTATIONAL SPECTRUM OF TETRAFLUOROMETHANE-PYRIDINE

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The rotational spectrum of pyridine-tetrafluoromethane has been investigated by molecular beam Fourier transform microwave spectroscopy in a supersonic expansion. The CF$_4$ moiety is positionated as a cap over the pyridine nitrogen, and it is freely rotating. For this reason, in the $m=0$ state, only the pyridine ring is rotating along the a-axis, and the value of rotational constant $A'$ is coinciding with that of the constant $A$ of pyridine. The N···C$_{CF_4}$ distance is 3.33(2) Å. The dissociation energy has been estimated, from the centrifugal distortion, to be ca. 10 kJ/mol.