On the molecular geometry of the $FCO_2^{\cdot}$ radical

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The rotational sepctra of the three isotopologues of the fluoroformyloxyl radical have been measured and analysed. Together with the experimental work, detailed *ab initio* calculations were performed to stand as a theoretical base for transition assignments. Analyses of all the spectra provided three sets of accurate molecular constants. These parameter sets were used to get various types of radical geometries – the combination of effective and substitution geometry, semiempirical equilibrium geometry, and, in the case of $FC^{16}O^{18}O$, even the different bond lengths of C-^{16}O and C-^{18}O were evaluated in vibrational ground state.