HIGH-RESOLUTION INFRARED SPECTROSCOPY OF THE $(1,0,1)-(0,0,0)$ BAND OF C_3

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Using the carbon cluster experiment at Cologne in combination with a home-made optical parametric oscillator operating at three microns, the $(1,0,1)-(0,0,0)$ combination band of the C_3 cluster has been investigated around 3260 cm^{-1}. In addition, the associated $(1,1,1)-(0,1,0)$ hot band has been observed. Using sample rods enriched in ^{13}C, the $(1,0,1)-(0,0,0)$ band was also studied for the two isotopologs ^{13}CCC and C^{13}CC. The experimental molecular parameters obtained compare very favorably with results from coupled-cluster calculations.