SATELLITE BANDS OF K, Rb AND Cs RESONANT LINES AS FRANCK-CONDON WINDOWS TO INTERMEDIATE LONG-RANGE MOLECULES

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Very far quasi-static wings of self-broadened first resonance lines of potassium(1) rubidium (2) and cesium (3) are rich in different types of satellite bands that stem from various avoided crossings. Detailed experimental study of the absorption and emission profiles in the region of satellite bands should reveal the possibility of existence of bound states in the so called intermediate long-range region. These bound states lie above the corresponding asymptotic level at internuclear distances of about 2-3 nm(4). They can be used to reach much higher bound intermediate long-range states of K2, Rb2 and Cs2 molecules at moderate or ultra-cold temperatures.

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