**A new precise value of the absolute 2(3)S(1), F=5/2-2(3)P(2), F=7/2 transition frequency in Li-7(+)**

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*European Physical Journal D VOLUME: 3 ISSUE: 3 (SEP 1998) 217-222*

The absolute frequency $v_0$ of the optical electric-dipole transition between the metastable 1s2s $^3S_1$, F = 5/2 and the short-lived 1s2p $^3P_2$, F = 7/2 hyperfine structure sublevels of the helium-like $^7Li^+$ ion in its rest frame was determined by combining Doppler-free saturation spectroscopy and laser heterodyning. One of two CW single-mode dye lasers was locked to the calibrated w-component of the [R(85) 26-0]-line in the (B-X)-system of the $^{127}I_2$-molecule at vB = 546 462 926.790(71) MHz. While crossing two counterpropagat ing beams of the other laser perpendicularly (lab angle α 90°) wit h a low-velocit y ion beam and tuning its frequency over the $Li^+$ transition under study, the distance of the Lamb-dip center frequency $v_L$ from $v_B$ was obtained by mixing both laser frequencies with an avalanche diode and registering their beat frequency at about 4 GHz wit h a quartz-st abilized high-frequency counter. The Lambdip position $v_L$ was measured for different ion velocities β (in units of the velocity of light) in the range of (3-4) x 10 $^1$. The parameters $v_0$ and cos α of the relativistic Doppler formula $v_0 = v_L\gamma(1- \beta \cos \alpha)$ were extracted via a fit to the experimental data set (β, $v_L$), providing $v_0$, 546 466 916.49(87) MHz and cos α 4.580(0.045) x $10^{-4}$. This result of $v_0$ differs noticeably from $v_0$ = 546 466 918.79(40) MHz, measured by another group in a collinear-beam configuration at an ion bean propagating wit h β = 6 x $10^{-3}$.