# OSCILLATORY RULE IN THE ENERGY SPECTRUM OF TRAPS IN KCl AND NaI CRYSTALS

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S u m m a r y

The thermoluminescence (TL) method is used for the investigation of the energy spectrum of traps in KCl and NaI crystals in the temperature range 80–500 K. It is shown that the thermal activation energies of traps in KCl and NaI form one oscillatory series $E_n = \hbar\omega n$ with vibrational quantum energies of 0.121 eV (979 $\mathrm{cm}^{-1}$) in KCl and 0.061 eV (492 $cm^{-1}$) in NaI. In this case, the quantum number $n$ assumes half-integer and integer values. Based on the generalized data on the investigated alkali-halide crystals (AHC), we confirmed the earlier proposed model of TL in AHCs. It is assumed that, in addition to the nonradiative *H-F* recombination, there exists the two-stage recombination of $H$-centers at anion vacancies resulting in the radiative recombination of a hole at an $F$-center. The energy of a quantum in the oscillatory rule corresponds to a local vibrational mode of an $X_2^-$ halide molecule.