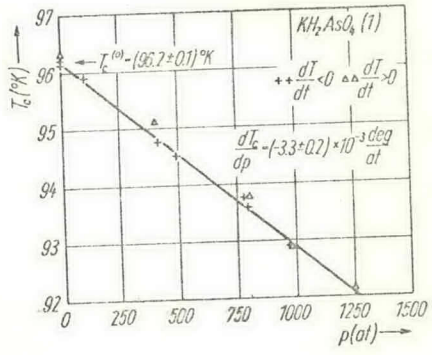

Fig. 3. Pressure dependence of the transition temperature T_c for a KH_2AsO_4 crystal (10^3 at = 0.981 kbar)

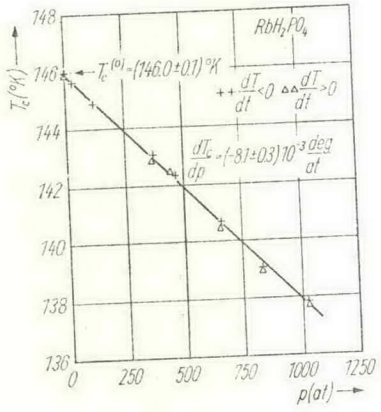

Fig. 4. Pressure dependence of the transition temperature T_c for a RbH_2PO_4 crystal

pressure the phase transition is shifted to lower temperatures with no essential change in the shape of the $\varepsilon(T)$ anomaly. The maximum values of the dielectric constant increase somewhat under pressure influence. Fig. 3 and 4 show the transition temperatures as functions of pressure. Within the measured pressure range a linear dependence was found. In the case of two KH_2AsO_4 crystals ($T_c = 96.2$ °K and 95.6 °K, respectively) the shifts of T_c with pressure, $dT_c/dp = (-3.4 \pm 0.2)$ deg/kbar and (-3.2 ± 0.2) deg/kbar, were observed. In the case of the RbH_2PO_4 crystal ($T_c = 146$ °K) we obtained $dT_c/dp = (-8.2 \pm \pm 0.3)$ deg/kbar. These shifts and that for KH_2PO_4 [3] are listed in Table 1, and plotted in Fig. 5 against the transition temperature at atmospheric pressure. The measured points lie almost in a straight line. This may be accidental, and it should be tested experimentally with the other isomorphous ferroelectric substances, e.g. RbH_2AsO_4 ($T_c = 110$ °K).

Table 1

Experimental data of KH_2AsO_4, KH_2PO_4, and RbH_2PO_4 and derived data about the tunneling energy Ω and the interaction parameter J (cf. the text). Data of the deuterated crystals are designated by the index D

	KH_2AsO_4	KH_2PO_4	RbH_2PO_4
T_c (°K)	96	122	146
$T_{c,D}$ (°K)	162	213	218
$-\frac{dT_c}{dp}\left(\frac{deg}{kbar}\right)$	3.3	5.7 [3]	8.2
$S_1(T_c)$ (10^{-3} kbar^{-1})	1.16*)	1.13*)	1.21*)
Ω/kT_c	0.45	0.65	0.77
Ω (cm^{-1})	30	55	78
$4\,\Omega/J$	0.42	0.57	0.65
J_D/J	1.57	1.53	1.26

*) Calculated by linear extrapolation to the transition temperature from experimental data of Haussühl [16].