# Relaxation Dielectric Properties of GPI Crystal

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Within pseudospin model of ferroelectric GPI on the basis of Zubarev nonequilibrium statistical operator [1] we obtained kinetic equation for pseudospin operators [2]. Solving this equation we have calculated the temperature and frequency dependences of dynamic dielectric permittivity (fig.1, 2) of the crystal, relaxation time. At the proper set of parameters satisfactory description of experimental data is obtained.
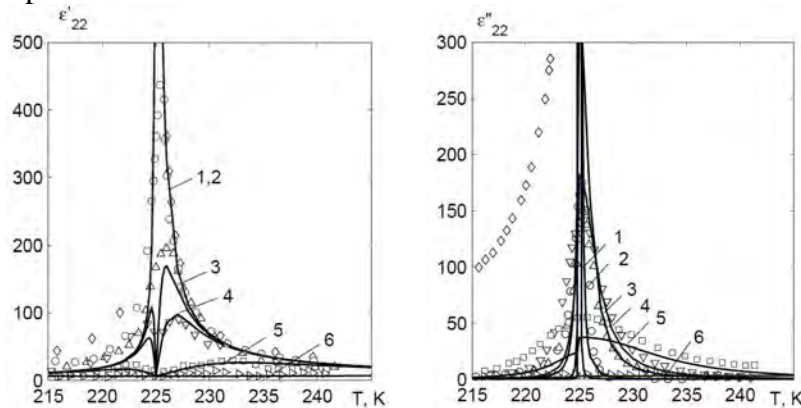
Figure 1. Temperature dependeces of e'_{33} and e''_{33} of GPI crystal for various frequencies v (MHz): 1.0 – 1, ◊[3]; 15.0 – 2, ○[3]; 230.0 – 3,□ [3]; 610 – 4, □ [3]; 2000 – 5, □[3]; 27000 – 6, ▷[3].
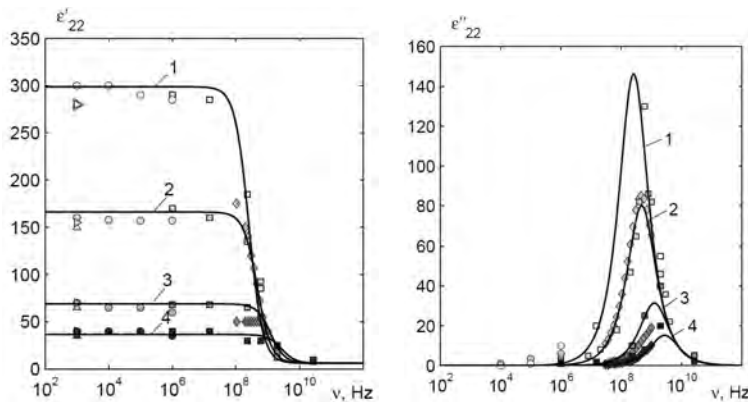
Figure 2. Frequency dependeces of e'_{33} and e''_{33} of GPI crystal for various ΔT (K): 1.0 – 1, 2.0 – 2, 5.0 – 3, 10 – 4; Symbols: ● [4], ■[3], ♦[5], ▶[6], ▲[7].

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