The modes of recording the multidimensional NQR nutation spectra have been analyzed using different off-resonance methods. A method of recording the nutation spectra in off-resonance conditions, based on optimal filtration, has been proposed. For the first time, an experimental spectrum of 3D-$^{35}\text{Cl}$ NQR nutation of chloral hydrate is presented.

**Key words:** 2D Spectroscopy; NQR; Nutation; Exchange: Off-resonance Irradiation.