Dynamical properties of honeycomb-lattice magnets Na$_2$IrO$_3$
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of magnetic effective models for Na$_2$IrO$_3$. The effective magnetic models have been
much discussed to explain the zigzag magnetic ordering of this compound [1-6]. The
most characteristic point of the proposed models is that the presence of the Kitaev
type anisotropy is expected in addition to the Heisenberg coupling. Although there
are several proposals for the coupling magnitude of the effective models, the quali-
tative and quantitative evaluations have been still lacking from the viewpoint of dy-
namics. From the above background, we carried out numerical exact diagonalization
and calculated the dynamical structure factors for the proposals in pioneering works
[2,3,5,6]. The obtained results were compared with inelastic-neutron-scattering mea-
surements [2]. We found that the parameter set proposed in ref. [6] well explains
a characteristic boundary structure of the lowest excitation around Y point and an
intensity distribution in the low energy region [2].

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